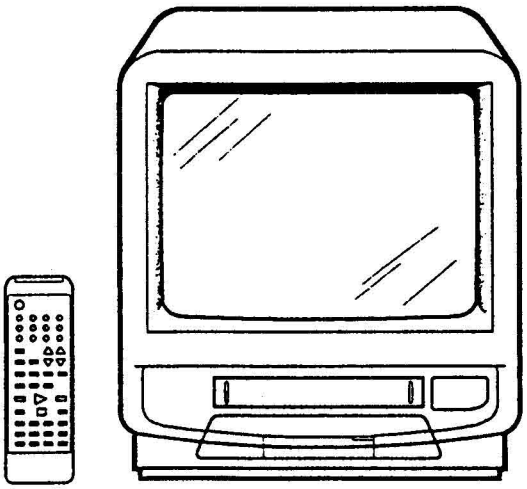
Service Manual

ORION

COLOR TELEVISION/VIDEO CASSETTE RECORDER

VHS
PAL

MODEL COMBI 5196



Chassis Code:

A

Bestell-Nr.:

5551

HOW TO ORDER PARTS

Please include the following informations when you order parts. (Particularly the CHASSIS CODE.)

A. MODEL NUMBER and CHASSIS CODE
   You can find it in the back of your unit.

B. PART NO. and DESCRIPTION
   You can find it in your SERVICE MANUAL.

SPECIFICATIONS

TV SECTION

PICTURE SIZE		20 inch
SYSTEM		PAL
FREQUENCY RANGE :	VHF(L)	E2- S6 ch
	VHF(H)	S7 - S41 ch
	UHF	21 - 69 ch
MAXIMUM SENSITIVITY	VHF	25 dB
	UHF	25 dB
INTERMEDIATE FREQUENCY		
Picture IF Carrier Frequency		38.9 MHz
Color Sub Carrier Frequency		34.47 MHz
Sound IF Carrier Frequency		33.4 MHz
SOUND INTERMEDIATE FREQUENCY		5.5 MHz
MAXIMUM OUTPUT POWER		2.2 W
10% THD OUTPUT POWER		1.8W
SPEAKER		8 ohm
POWER SOURCE		AC 230V

VCR SECTION

VIDEO SIGNAL	CCIR 625 lines 50 fields
VIDEO RECORDING SYSTEM	VHS, 2 rotary heads helical scanning system Luminance : FM azimuth recording Color signal :converted sub-carrier
AUDIO TRACK	1 track
TAPE FORMAT	12.7 mm high density tape
TAPE SPEED	23.39 mm/sec
INPUT LEVEL	Video : VIDEO IN jack 1.0Vp-p, 75 ohm unbalanced Audio : AUDIO IN jack 500mV, 50K ohm unbalanced
OUTPUT LEVEL	Video : VIDEO OUT jack 1.0Vp-p, 75 ohm unbalanced Audio : AUDIO OUT jack 500mV, 1K ohm unbalanced
WEIGHT	23.8 Kg
DIMENSIONS	504(W) X 472(D) X 500(H) mm

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HQ FEATURE

This video recorder is equipped with HQ (High Quality) recording capability. A built-in detail enhancer is used to boost the recorded signal for cleaner, sharper images and maximum picture quality in playback.

DISASSEMBLY INSTRUCTIONS

1. REMOVAL OF MECHANICAL PARTS AND P.C. BOARDS

1-1. BACK CABINET (Refer to Fig. 1-1)

1. Remove the 6 screws ① which are used for holding the Back Cabinet.
2. Disconnect the following connector. (CP351 2 pin) Remove the Back Cabinet in the direction of arrow.

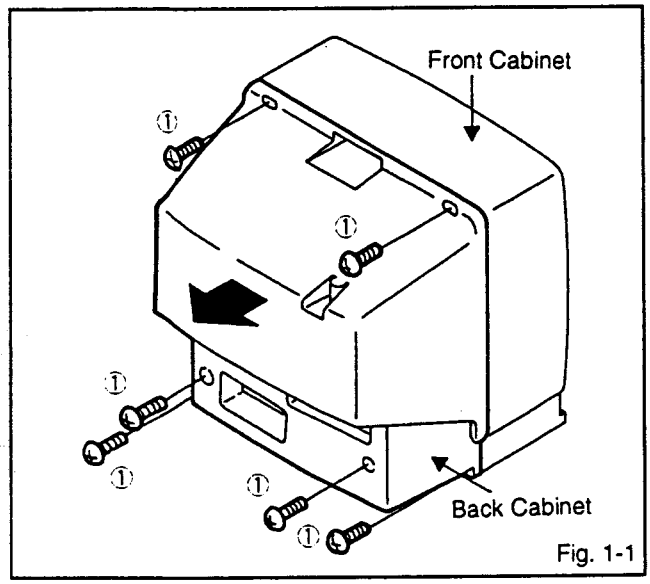


Fig. 1-1

CAUTION: BEFORE REMOVING THE ANODE CAP, DISCHARGE ELECTRICITY BECAUSE IT CONTAINS HIGH VOLTAGE. BEFORE ATTEMPTING TO REMOVE OR REPAIR ANY PCB, UNPLUG THE POWER CORD FROM THE AC SOURCE.

1-2: TV/VCR BLOCK (Refer to Fig. 1-2)

1. Remove the CRT PCB in the direction of arrow (A). then unplug the following connector. (CP801 3 pin)
2. Remove the Anode Cap.
3. Remove the 2 screws ①.
4. Disconnect the following connectors. (CP2501 5 pin, CP2502 4 pin, CP8010 6 pin, CP8011 3 pin, CP8002 6 pin)
5. Slide out the VCR Block in the direction of arrow (B).
6. Disconnect the following connectors. (CP401 4 pin, CP502 2 pin)
7. Unlock the 2 supports ②.
8. Slide out the TV Main PCB in the direction of arrow (C).

The speaker cannot be removed before removing the Earphone PCB.

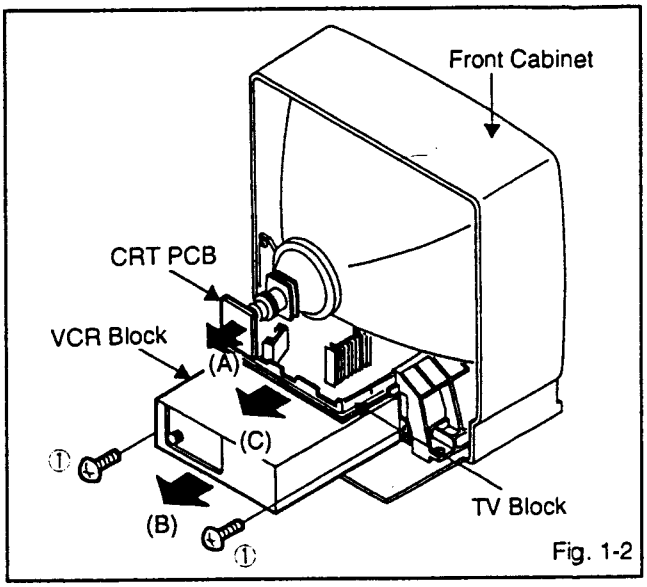


Fig. 1-2

1-3: OPERATION 2 PCB (Refer to Fig. 1-3)

1. Remove the 2 screw ①.
2. Remove the Operation 2 PCB in the direction of arrow.

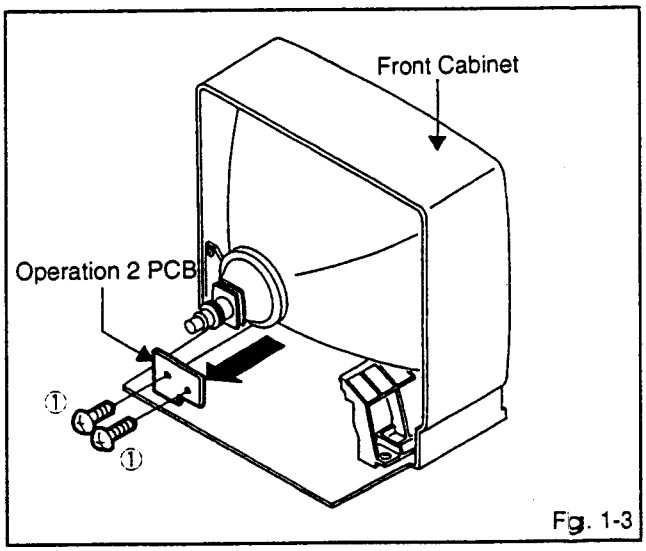


Fig. 1-3

1-4: TOP CABINET, BOTTOM CABINET AND OPERATION 1 PCB (Refer to Fig. 1-4)

1. Remove the 2 screws ①.
2. Remove the Top Cabinet in the direction of arrow (A).
3. Unlock the 2 supports ② then remove the Operation 1 PCB in the direction of arrow (B).
4. Remove the screw ③.
5. Unlock the 3 supports ④.
6. Remove the Bottom Cabinet in the direction of arrow (C).

DISASSEMBLY INSTRUCTIONS

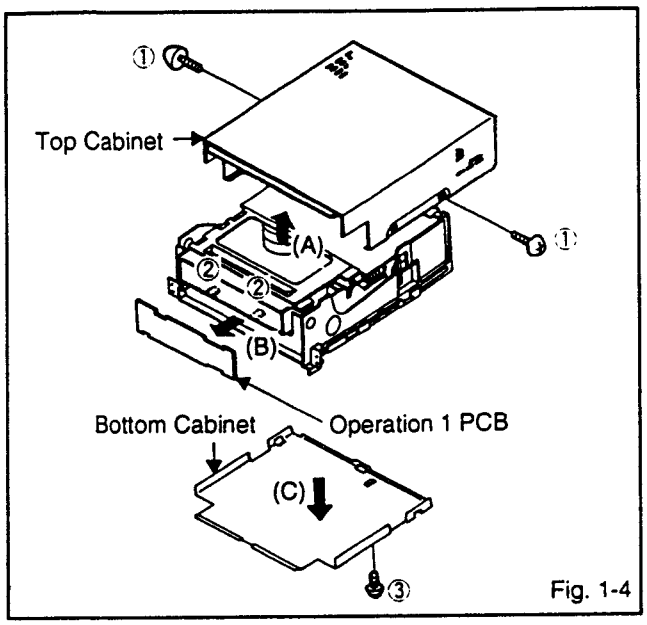


Fig. 1-4

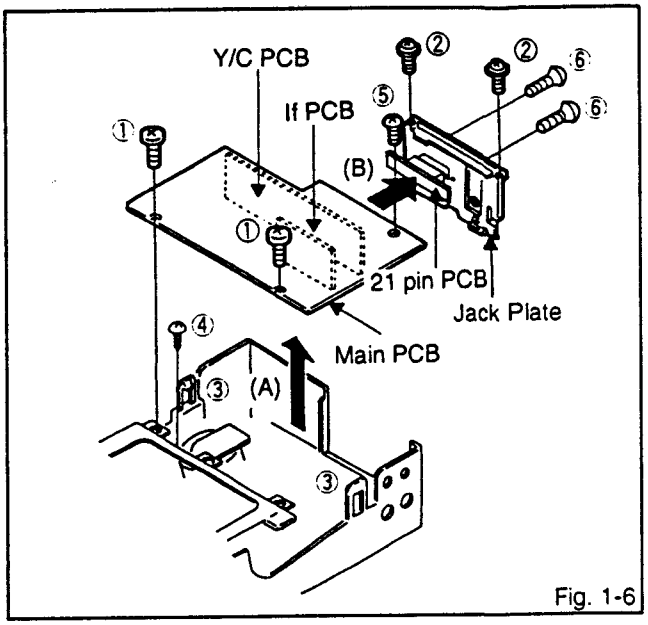


Fig. 1-6

1-5: LOCATION OF PRINTED CIRCUIT BOARDS. (Refer to Fig. 1-5)

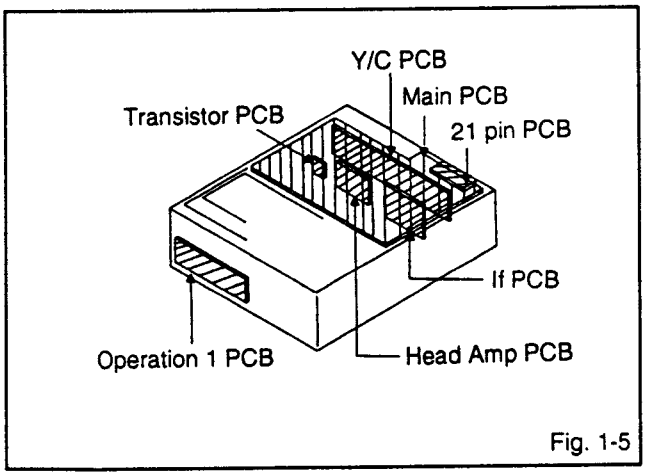


Fig. 1-5

1-6: MAIN PCB (Refer to Fig. 1-6)

1. Remove the 2 screws ①.
2. Remove the 2 screws ②.
3. Unlock the 2 supports ③ and remove the Main PCB in the direction of the arrow (A), then disconnect the following connectors. (CP2001 2 pin, CP2003 9 pin, CP2004 17 pin, CP4102 7 pin, CP5001 5 pin, CP2002 6 pin of cylinder unit.)
4. Remove the Trasistor PCB. **(Refer to item 1-7.)**
5. Remove the screw ④ and release the Wire Earth.
6. Remove the screw ⑤.
7. Remove the 2 screw ⑥ and remove the 21 pin PCB.
8. Remove the Jack Plate in the direction of arrow (B).
9. If IF PCB and Y/C PCB needs to be removed from Main PCB, desoldering is necessary.

1-7: TRANSISTOR PCB (Refer to Fig. 1-7)

1. Insert a small flat-blade Screwdriver into the
2. Transistor Spring.
3. Expand the Transistor Spring in the direction of arrow by using a Screwdriver.
   Hold both edges of the Transistor PCB ((A) part) with your fingers and pull out the Transistor PCB while turning
   the Screwdriver.

NOTES

1. The unit should be unplugged from the AC outlet.
2. Do not scratch or mar the Cylinder.
3. Be careful not to split the Transistor PCB.
4. If the Transistor Spring is bent when holding or removing the Transistor PCB, replace with a new one.

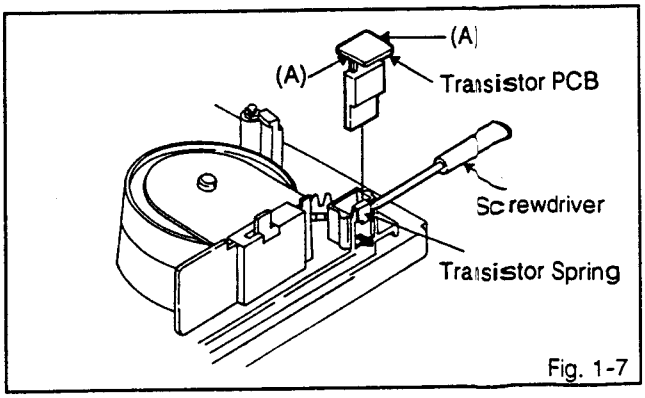


Fig. 1-7

DISASSEMBLY INSTRUCTIONS

1-8: FRONT LOADING UNIT AND CHASSIS SECTION
(Refer to Fig. 1-8)

1. Remove the 2 screws ①.
2. Remove the screw ②.
3. Remove the Front Loading Belt.
4. Remove the Front Loading Unit in the direction
5. of arrow (A).
6. Remove the 3 screws ③.
   Unlock the 2 supports ④ and unlock the Chassis Section in the direction of arrow (B).

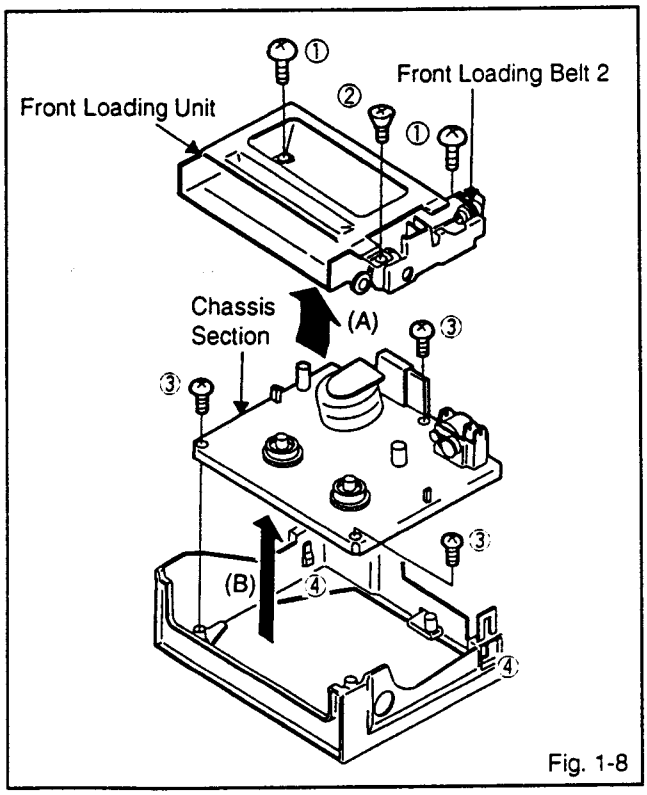


Fig. 1-8

DISASSEMBLY INSTRUCTIONS

2. REMOVAL OF DECK PARTS

2-1: ACTUATOR SUB BRAKE / IDLER ASS'Y (Refer to Fig. 2-1)

1. Remove the polyslider washer ①.
2. Remove the Idler Ass'y.
3. Remove the TS Brake Spring.
4. Remove the Actuator Sub Brake.

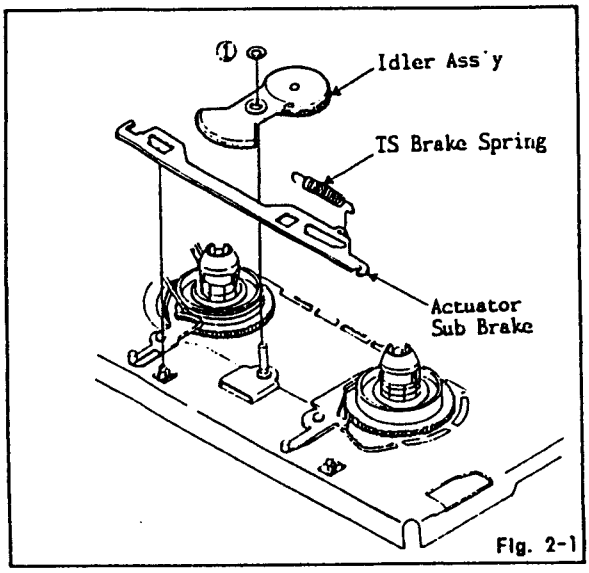


Fig. 2-1

2-2: TENSION BAND (Refer to Fig. 2-2)

1. Remove the Actuator Sub Brake.
2. Remove the SS Brake Spring, then remove the SS Brake Arm.
3. Remove the screw ①.
4. Remove the Tension Band Ass'y from the Tension Arm Ass'y.

NOTES

1. Install the Tension Band Ass'y without twisting it.
2. Adjust the placement of the Tension Post. (Refer to Item 1-2 of MECHANICAL ADJUSTMENTS)
3. Adjust and confirm the back tension during playback. (Refer to Item 1-3 of MECHANICAL ADJUSTMENTS)

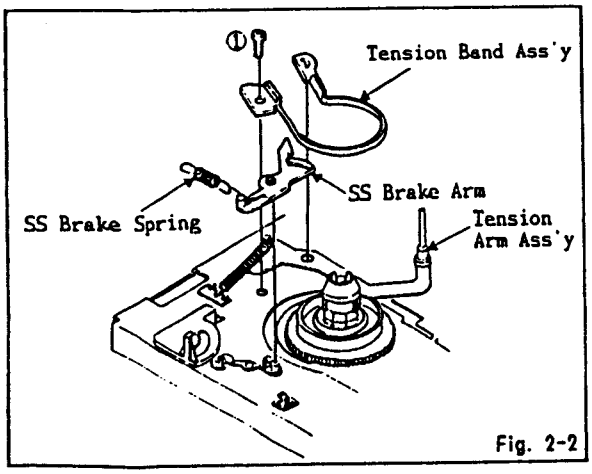


Fig. 2-2

2-3: REEL DISK (Refer to Fig. 2-3)

(Reel Disk S Ass'y)

1. Remove the Actuator Sub Brake.
2. Remove the SS Brake Spring, then remove the SS Brake Arm.
3. Remove the Tension Band ass'y from the Tension Arm Ass'y.
4. Remove the polyslider washer ①.
5. Pull the Reel Disk S Ass'y upward and replace it.

(Reel Disk T Ass'y)

1. Remove the Actuator Sub Brake.
2. Remove the TS Brake Spring.
3. Move the TS Brake Ass'y in the direction of arrow.
4. Remove the polyslider washer ②.
5. Pull the Reel Disk T Ass'y upward and replace it.

NOTES

1. The height adjustment washers ③ are sometimes attached to the back of the Reel Disk.
2. Clean the Reel Disk Shaft and put in height adjusting washers ③.
3. Be careful not to damage the Tension Band Ass'y at the time of removal and installation.
4. Be careful not to scratch the Reel Disk Shaft with the polyslider washer or the tool at the time of removal and installation.
5. After oiling (Cosmo Oil Hydro HV100) the Reel Disk Shaft, install the new Reel Disk S Ass'y and Reel Disk T Ass'y again.
6. After installation, adjust the height of the Reel Disk. (Refer to Item 1-1 of MECHANICAL ADJUSTMENTS)
7. After installation, adjust and confirm the tension post position. (Refer to Item 1-2 of MECHANICAL ADJUSTMENTS)

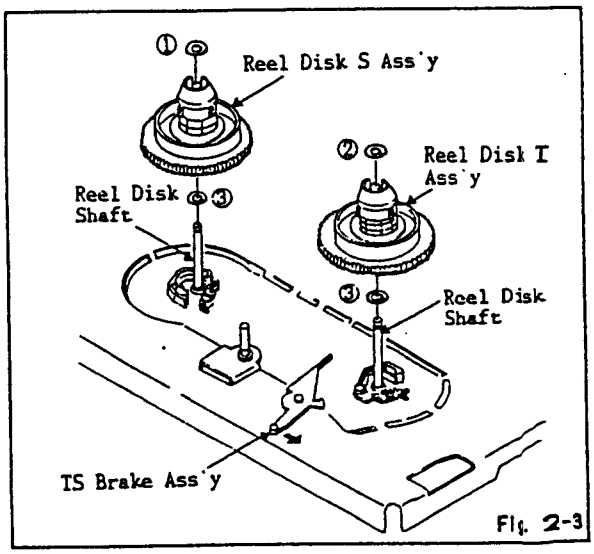


Fig. 2-3

2-4: A/C HEAD (Refer to Fig. 2-4)

1. Disconnect the 2 connectors (2 pin and 6 pin) on the A/C Head PCB.
2. Remove the screws ①, ② and ③.

NOTE

Do not touch the heads by any means when replacing the A/C Head.

DISASSEMBLY INSTRUCTIONS

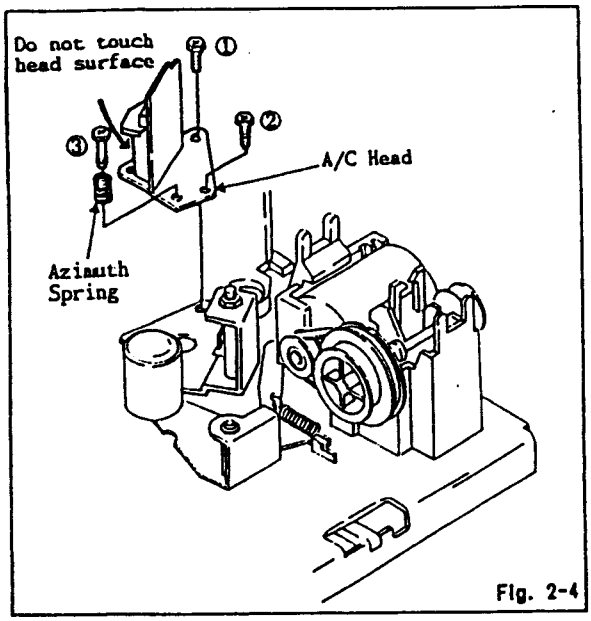


Fig. 2-4

2-5: LOADING MOTOR (Refer to Fig. 2-5)

1. Remove the 2 wires soldered to the Loading Motor.
2. Remove the lead wire in the hook of the Loading Motor Box.
3. Remove the Loading Motor Belt.
4. Remove the 2 screws ①, then remove the Loading Motor Box.
5. Remove the Front Loading Belt.
6. Remove the 2 screws ②, then lift the Loading Motor upward.

NOTES

1. Clean the pulley when replacing Front Loading Belt and Loading Motor Belt.
2. Avoid getting grease on the Loading Motor Belt and Front Loading Belt.

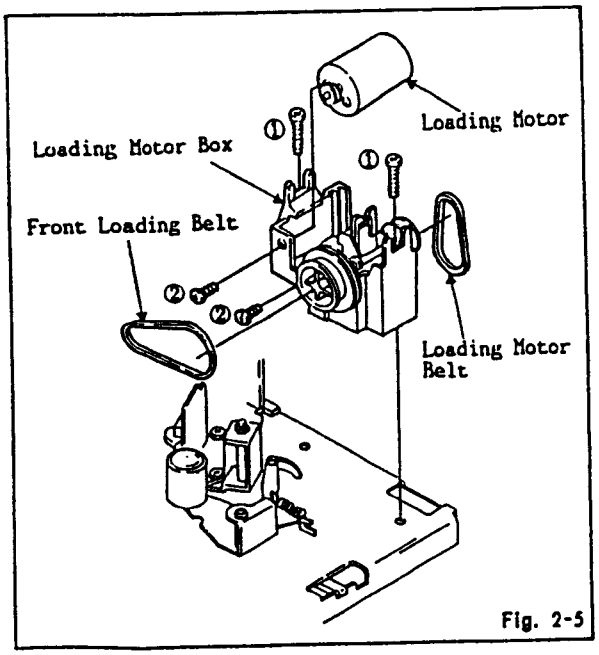


Fig. 2-5

2-6: PINCH ROLLER ARM (Refer to Fig. 2-6)

1. Remove the Pinch Roller Arm Spring.
2. Remove the polyslider washer ①.
3. Remove the Pinch Roller Arm.

NOTE

Do not touch the Pinch Roller. (Use gloves.)

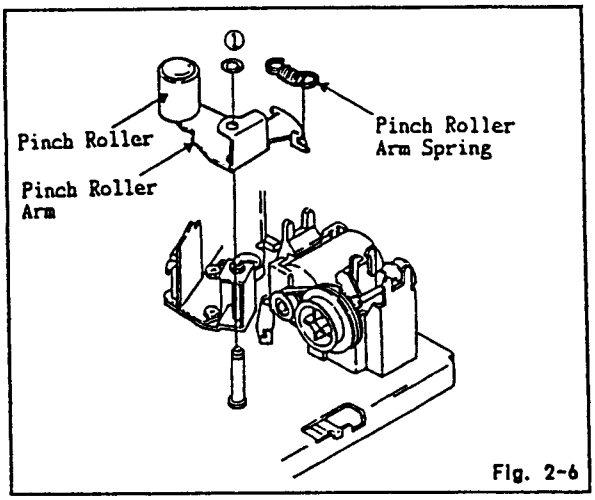


Fig. 2-6

2-7: CYLINDER UNIT (Refer to Fig. 2-7)

1. Remove the Transistor PCB. (Refer to Item 1-7)
2. Disconnect the connector (CP4102 9 pin) from the Head Amp PCB.
3. Remove the 3 screws ①, then remove the Cylinder Unit from the Main Chassis.
4. Disconnect the connector ②.

NOTES

1. Do not touch the surface of the Cylinder Head.
2. After replacement, confirm the following adjustments.

   a. MECHANICAL ADJUSTMENTS : ITEM 2-2
   b. ELECTRICAL ADJUSTMENTS : ITEM 3-1
   c. ELECTRICAL ADJUSTMENTS : ITEM 3-2

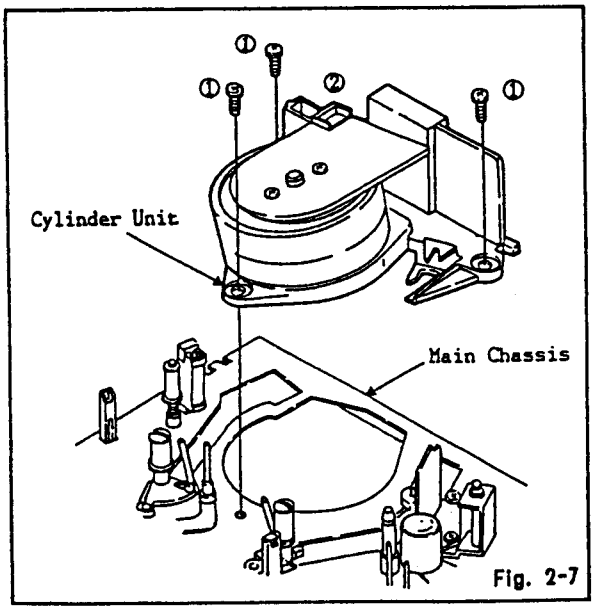


Fig. 2-7

DISASSEMBLY INSTRUCTIONS

2-8: DECK PCB (Refer to Fig. 2-8)

1. Remove the Reel Belt.
2. Remove the solder Ⓐ positions, remove the 2 screws ① and screw ②.
3. Remove the Deck PCB.

NOTES

1. When installing the Deck PCB, be sure to set the Rotary Switch to the EJECT position. The EJECT position is the point where the Ⓑ tooth is aligned to Ⓒ.
2. Avoid getting grease on the Reel Belt.

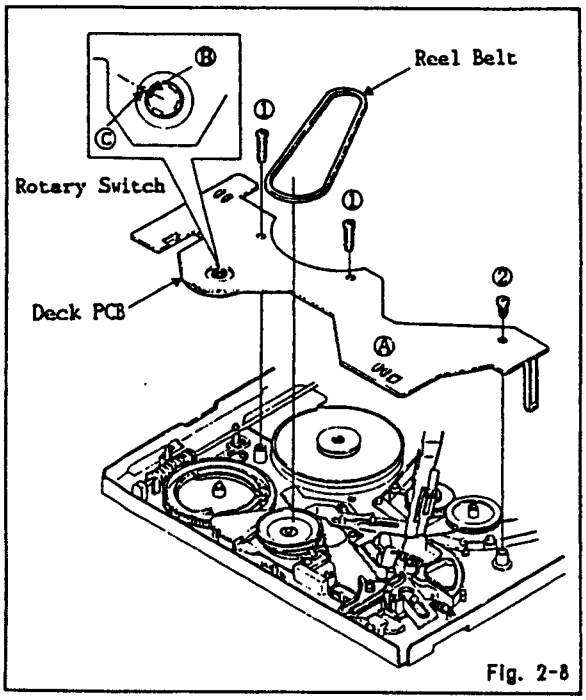


Fig. 2-8

2-9: CAPSTAN DD UNIT (Refer to Fig. 2-9-A, B)

1. Remove the 3 screws ①. (Refer to Fig. 2-9-A)
2. Remove the Loading Motor Belt.
3. Remove the screw ①, then remove the Bracket Worm 3.
4. Remove the Worm.
5. Remove the Capstan DD Unit.

NOTE

1. Do not bend the Limiter Post.
2. Use the specified screw held to the Capstan DD Unit.
3. Install in the position where the Capstan DD Unit PCB gets up to the Ⓐ position.

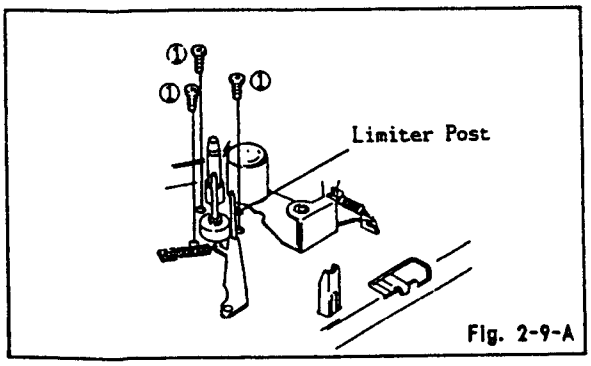


Fig. 2-9-A

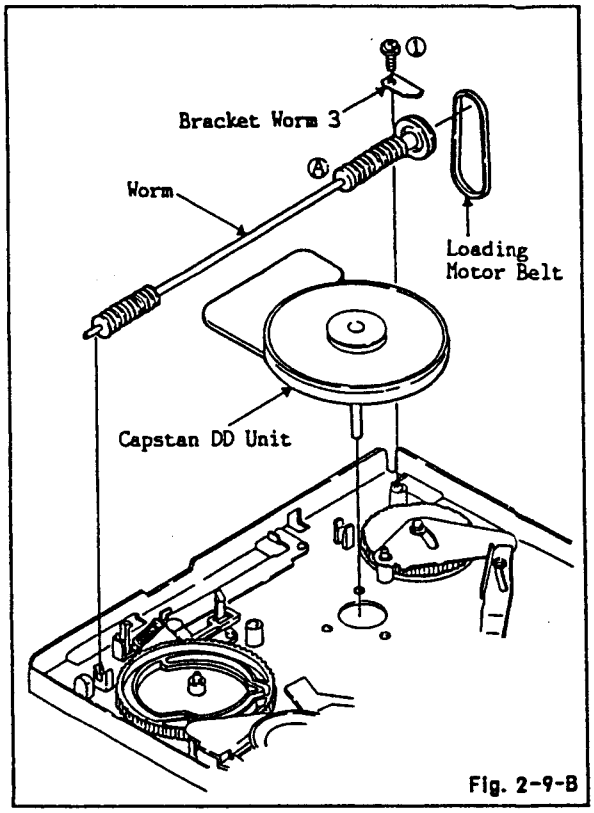


Fig. 2-9-B

2-10: CAM 1 / CAM 2 (Refer to Fig. 2-10-A, B, C)

1. Remove the E-ring ①, then remove the washer ②.
2. Remove the E-ring ③, then remove the washer ④.
3. Remove the Slide Loading 2.
4. Remove the E-ring ⑤, then remove the washer ⑥.
5. Remove the polyslider washer ⑦.
6. Remove the Loading Lever 2 Ass'y, then remove the Cam 1.
7. Remove the polyslider washer Ⓑ, then remove the Lever Clutch Actuator.
8. Remove the polyslider washer ⑨, then remove the Cam 2.

NOTE

Be sure to install in the EJECT position. (Refer to Fig. 2-10-B, C)

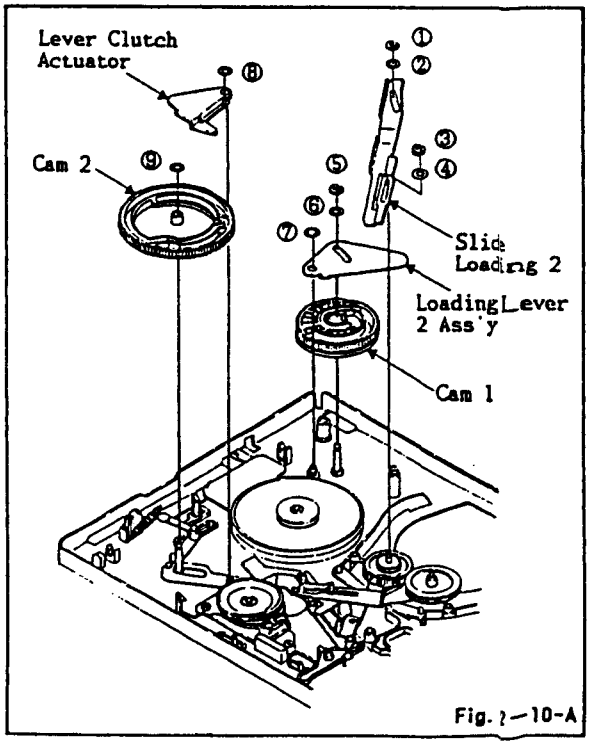


Fig. 2-10-A

DISASSEMBLY INSTRUCTIONS

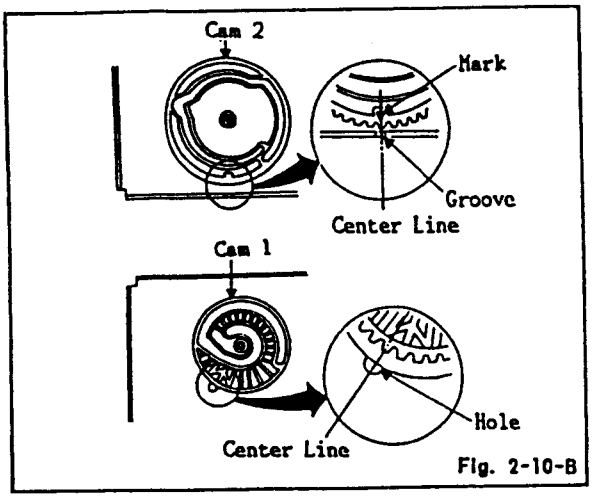


Fig. 2-10-B

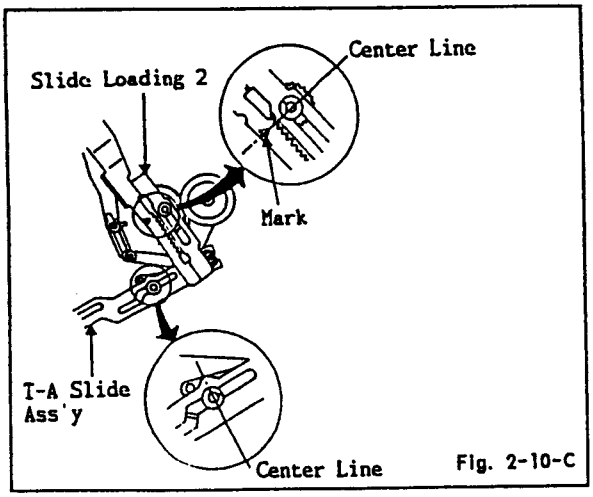


Fig. 2-10-C

2-11: LINK GEAR (R) / CLUTCH GEAR (Refer to Fig. 2-11)

1. Remove the 2 screws on the Side Bracket R2 Ass'y and remove the Side Bracket.
2. Remove the Link Gear (R) and Clutch Gear.

NOTES

1. When installing the Link Gear Spring R2 to the Link Gear (R), proceed in order ①, ②, ③ as shown in Fig. 2-11.
2. When installing the Link Gear (R), match the position of the Link Gear (R) so that the line over the two ribs on the Synchro Gear goes through the marking hole on the Link Gear (R).

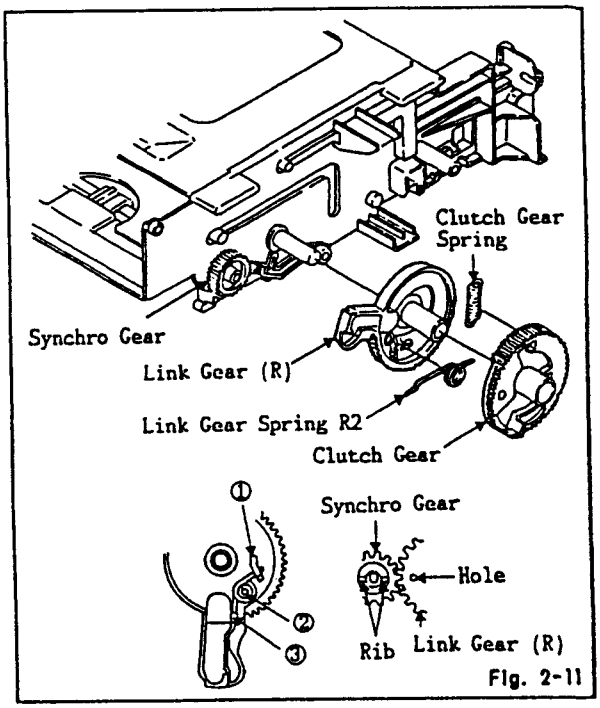


Fig. 2-11

2-12: LINK GEAR (L) (Refer to Fig. 2-12)

1. Remove the Synchro Gear.
2. Remove the Link Gear (L).

NOTES

1. When installing the Link Gear Spring (L) to the Link Gear (L), proceed in order ①, ②, ③ as shown in Fig. 2-12.
2. When installing the Synchro Gear, match the position of the Synchro Gear so that the line over the two ribs on the Synchro Gear goes between the marking bosses on the Link Gear (L).

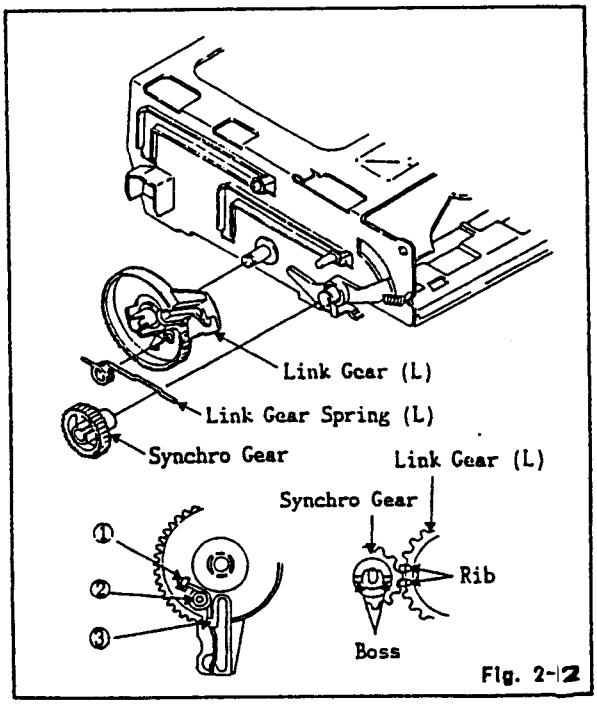


Fig. 2-12

DISASSEMBLY INSTRUCTIONS

3. REMOVAL OF ANODE CAP

Read the following Noted items before starting work.

* After turning the power off there might still be a potential voltage that is very dangerous. When removing the Anode Cap, make sure to discharge the Anode Cap's potential voltage.
* Do not use pliers to loosen or tighten the Anode Cap terminal, this may cause the spring to be damaged.

REMOVAL

1. Follow the steps as follows to discharge the AnodeCap. **(Refer to Fig. 3-1.)**
   Connect one end of an Alligator Clip to the metal part of a flat-blade screwdriver and the other end to ground.
   While holding the plastic part of the insulated Screwdriver, touch the support of the Anode with the tip of the Screwdriver.
   A cracking noise will be heard as the voltage is discharged.

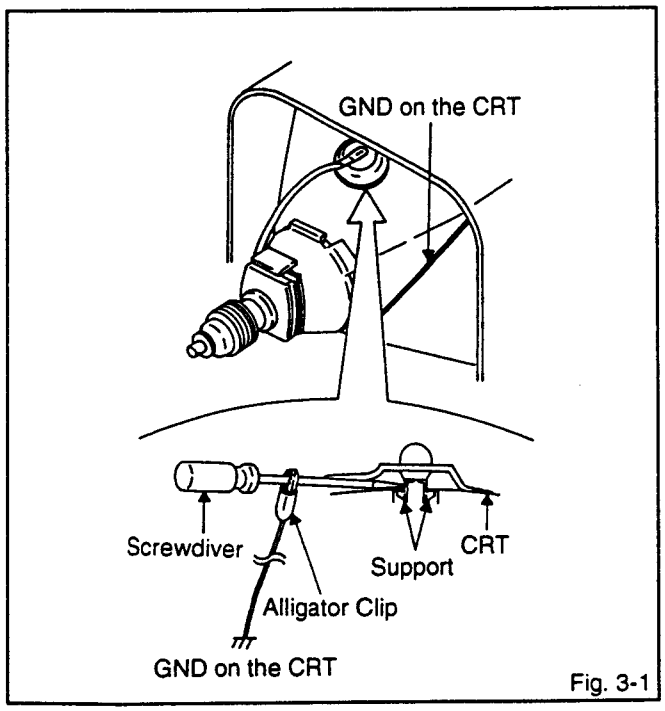


Fig. 3-1

2. Flip up the sides of the Rubber Cap in the direction of the arrow and remove one side of the support. **(Refer to Fig. 3-2.)**

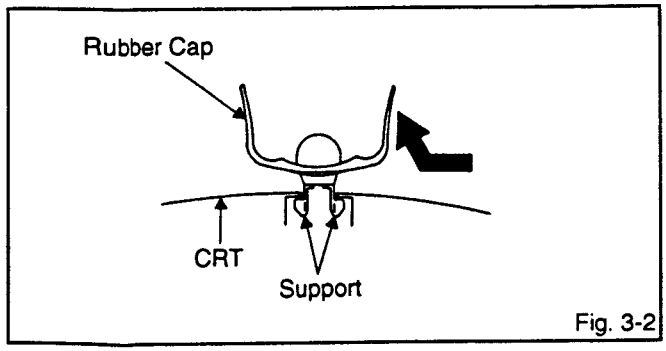


Fig. 3-2

3. After one side is removed, pull in the opposite direction to remove the other.

NOTE

Take care not to damage the Rubber Cap.

INSTALLATION

1. Clean the spot where the cap was located with a small amount of alcohol. **(Refer to Fig. 3-3.)**

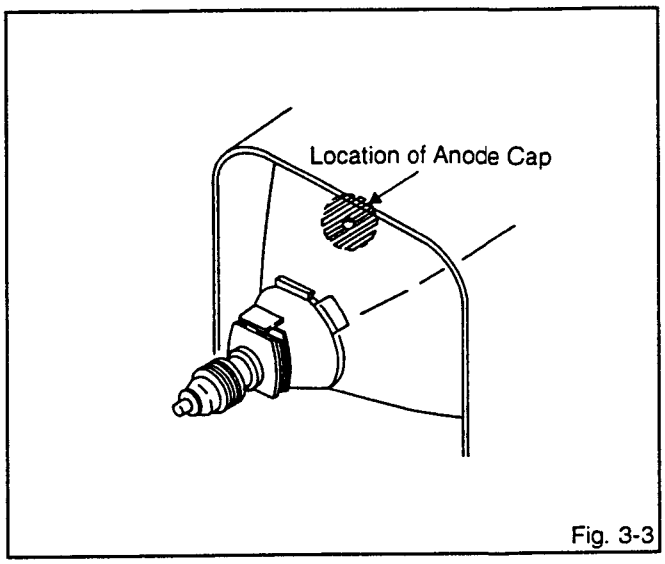


Fig. 3-3

NOTE

Confirm that there is no dirt, dust, etc. at the spot where the cap was located.

2. Arrange the wire of the Anode Cap and make sure the wire is not twisted.
3. Turn over the Rubber Cap. **(Refer to Fig. 3-4.)**

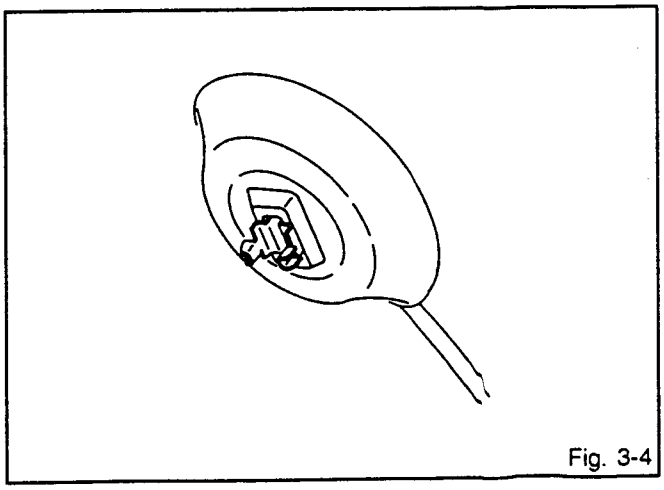


Fig. 3-4

DISASSEMBLY INSTRUCTIONS

4. Insert one end of the Anode Support into the anode button, then the other as shown in **Fig. 3-5**.

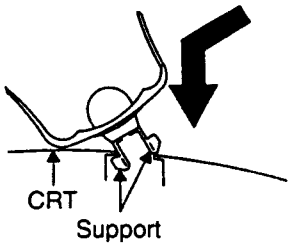


Fig. 3-5

5. Confirm that the Support is securely connected.
6. Put on the Rubber Cap without moving any parts.

KEY TO ABBREVIATIONS

A	AC	: Alternating Current
	A/C	: Audio/Control
	ACC	: Automatic Color Control
	AE	: Audio Erase
	AFC	: Automatic Frequency Control
	AFT	: Automatic Fine Tuning
	AFT DET	: Automatic Fine Tuning Detect
	AGC	: Automatic Gain Control
	AMP	: Amplifier
	ANT	: Antenna
	A.PB	: Audio Playback
	APC	: Automatic Phase Control
	ASS'Y	: Assembly
	AT	: All Time
	ATT	: Attenuator
	AUTO	: Automatic
	A/V	: Audio/Video
B	BGP	: Burst Gate Pulse
	BOT	: Beginning of Tape
	BPF	: Bandpass Filter
	BRAKE SOL	: Brake Solenoid
	BUFF	: Buffer
	B/W	: Black and White
C	C	: Capacitance, Collector
	CASE	: Cassette
	CAP	: Capstan
	CARR	: Carrier
	CCD	: Charged Coupled Device
	CE	: Chip Enable
	CH	: Channel
	CLK	: Clock
	CLOCK(SY-SE)	: Clock(Syscon to Servo)
	COMB	: Combination, Comb Filter
	CONV	: Converter
	CPM	: Capstan Motor
	CTL	: Control
	CYL	: Cylinder
	CYL-M	: Cylinder-Motor
	CYL SENS	: Cylinder Sensor
D	DATA(SY-SE)	: Data(Syscon to Servo)
	dB	: Decibel
	DC	: Direct Current
	DD Unit	: Direct Drive Motor Unit
	DEMOD	: Demodulator
	DET	: Detector
	DEV	: Deviation
E	E	: Emitter
	EE	: Electric to Electric
	EF	: Emitter Follower
	EMPH	: Emphasis
	ENC	: Encoder
	ENV	: Envelope
	EOT	: End of Tape
	EQ	: Equalizer
	EXT	: External
F	F	: Fuse
	FBC	: Feed Back Clamp
	FE	: Full Erase
	FF	: Fast Forward, Flipflop
	FG	: Frequency Generator
	FL SW	: Front Loading Switch
	FM	: Frequency Modulation
	FSC	: Frequency Sub Carrier
	FWD	: Forward
G	GEN	: Generator
	GND	: Ground
H	H	: High
	H.P.F	: High Pass Filter
	H.SW	: Head Switch
	Hz	: Hertz
I	IC	: Integrated Circuit
	IF	: Intermediate Frequency
	IND	: Indicator
	INT	: Interrupt
	INV	: Inverter
K	KIL	: Killer
L	L	: Left
	LED	: Light Emitting Diode
	LIMIT AMP	: Limiter Amplifier
	LM, LDM	: Loading Motor
	LOAD	: Loading
	LP	: Long Play
	L.P.F	: Low Pass Filter
	LUMI	: Luminance
M	M	: Motor
	MAX	: Maximum
	MIN	: Minimum
	MIX	: Mixer, Mixing
	MM	: Monostable Multivibrator
	MOD	: Modulator, Modulation
	MPX	: Multiplexer, Multiplex
	MS SW	: Mech State Switch
N	NC	: Non Connection
	NR	: Noise Reduction
O	OSC	: Oscillator
	OPE	: Operation
	OR EQ	: Or Equivalent
P	PB	: Playback
	PB CTL	: Playback Control
	PB-C	: Playback-Chrominance
	PB-Y	: Playback-Luminance
	PCB	: Printed Circuit Board
	P.CON	: Power Control
	PD	: Phase Detector
	PG	: Pulse Generator
	P-P	: Peak-to-Peak
	PWM	: Pulse Width Modulation
	PWM TV	: Pulse Width Modulated Tuning Voltage
R	R	: Right
	REC	: Recording
	REC-C	: Recording-Chrominance
	REC-Y	: Recording-Luminance
	REEL BRK	: Reel Brake
	REEL S	: Reel Sensor
	REF	: Reference
	REG	: Regulated, Regulator
	REW	: Rewind
	REV	: Reverse
	RF	: Radio Frequency
	RMC	: Remote Control
	RVS	: Reverse
	RY	: Relay
S	S.CLK	: Serial Clock
	S.COM	: Sensor Common
	S.DATE	: Serial Date
	SEG	: Segment
	SEL	: Select, Selector
	SENS	: Sensor
	SER	: Search Mode
	SI	: Serial Input
	SIF	: Sound Intermediate Frequency
	SO	: Serial Output
	SOL	: Solenoid
	SP	: Standard Play
	STB	: Serial Strobe
	SW	: Switch
	SYNC	: Synchronization
	SYNC SEP	: Sync Separator, Separation
T	TR	: Transistor
	TRAC	: Tracking
	TRIC PB	: Trick Playback
	TP	: Test Point
U	UNREG	: Unregulated
V	V	: Volt
	VCO	: Voltage Controlled Oscillator
	VIF	: Video Intermediate Frequency
	VP	: Vertical Pulse, Voltage Display
	V.PB	: Video Playback
	VR	: Variable Resistor
	V.REC	: Video Recording
	VSS	: Voltage Super Source
	V-SYNC	: Vertical-Synchronization
	VT	: Voltage Tuning
X	X'TAL	: Crystal
Y	Y	: Luminance
	Y/C	: Luminance/Chrominance

PREVENTIVE CHECKS AND SERVICE INTERVALS

The following standard table depends on environmental conditions and usage. Unless maintenance is properly carried out, the following service intervals may be quite shortened as harmful effects may be had on other parts. Also, long term storage or misuse may cause transformation and aging of rubber parts.

Parts Name \ Time	500 hours	1,000 hours	1,500 hours	2,000 hours	3,000 hours	Notes
Audio Control Head	■	■	■	■	■	Clean those parts in contact with the tape.
Full Erase Head	■	■	■	■	■	
Reel Belt		■		●		Clean the rubber, and parts which the rubber touches.
Front Loading Belt		■		●		
Pinch Roller	■	■	■	■	■●	
Capstan DD Unit					●	
Loading Motor					●	
Tension Band Ass'y					●	
Capstan Shaft	■	■	■	■	■	
Tape Running Guide Post	■	■	■	■	■	Replace when rolling becomes abnormal.
Cylinder Unit	■	■●	■	■●	■●	Clean the head

● : Replace, ■ : Clean

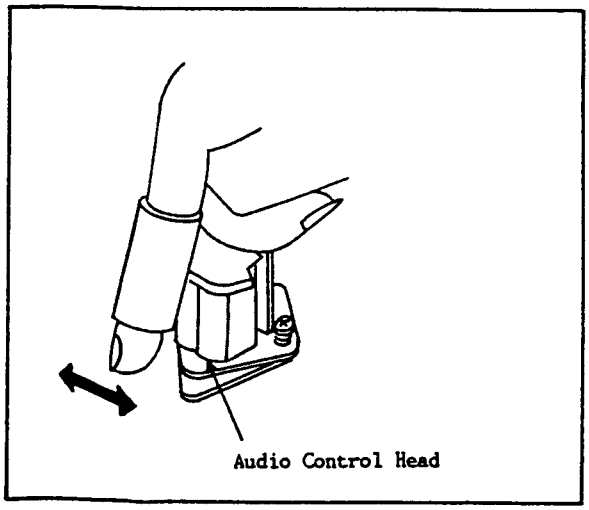
CLEANING

NOTE

- After cleaning the heads with isopropyl alcohol, do not run a tape until the heads dry completely. If the heads are not completely dry and alcohol gets on the tape, damage may occur.

1. AUDIO CONTROL HEAD

- Wrap a piece of chamois around your finger. Dip it in isopropyl alcohol and clean the audio control head by wiping it horizontally. Clean the full erase head in the same manner. (Refer to the figure below)



2. TAPE RUNNING SYSTEM

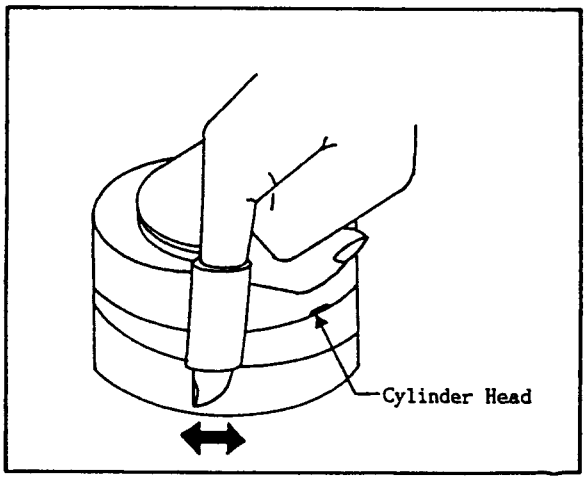
- When cleaning the tape transport system, use a chamois moistened with isopropyl alcohol.

3. CYLINDER

- Wrap a piece of chamois around your finger. Dip it in isopropyl alcohol and clean the cylinder head. Move the chamois horizontally several times (in the direction of the arrow). (Refer to the figure below)

NOTE

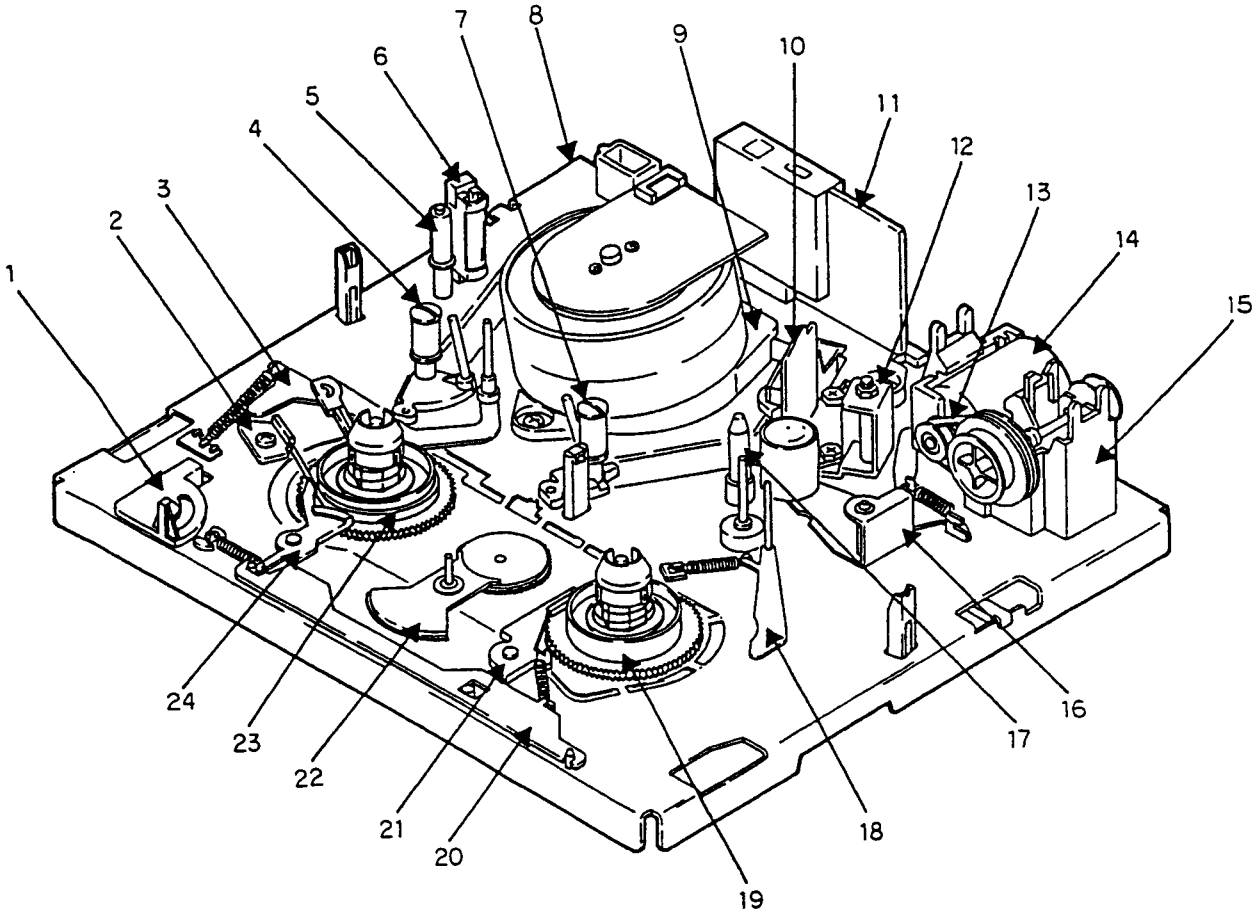
Do not exert force against the cylinder head. Do not move the chamois up or down since this can damage the head. Always use a piece of chamois for cleaning.



Part No.	Remarks
JG001E	Monoscope, 6 KHz
JG001F	Color Bar, 1 KHz
JG002F	Playback Take Up Torque
JG002G	Fast Forward Torque, Rewind Torque, Brake Torque(Take up Reel / Supply Reel)
JG005	Guide Roller Adjustment
JG021	X-Nut Adjustment
JG022/JG024	Reel Disk Height Adjustment
JG036	Tension Post Adjustment
JG100	Playback Back Tension Torque

DECK PART LOCATIONS

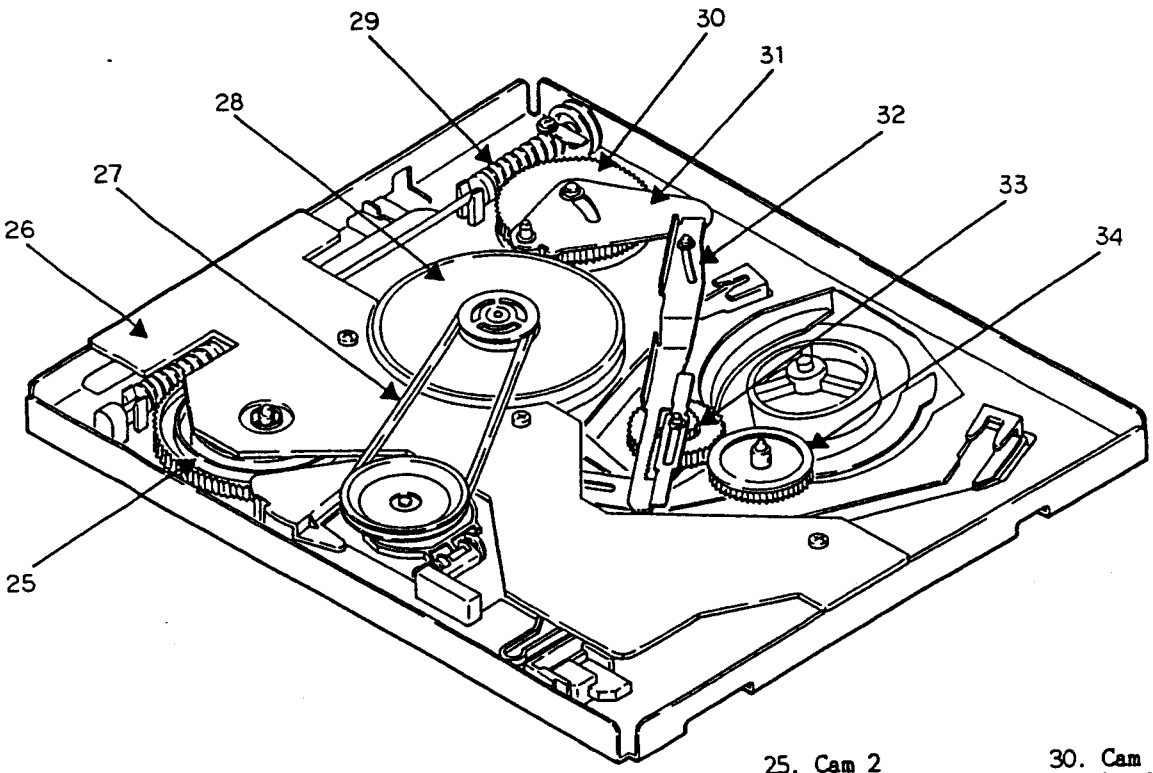
(TOP VIEW)



1. REC SW Lever
2. Tension Band Ass'y
3. Tension Arm Ass'y
4. Guide Roller Ass'y
5. P1 Post
6. Full Erase Head
7. Guide Roller Ass'y
8. Main Chassis
9. Cylinder Unit
10. A/C Head
11. Head Amp PCB
12. A/C Head Base
13. Front Loading Belt
14. Loading Motor
15. Loading Motor Box Ass'y
16. Pinch Roller Arm Ass'y
17. P4 Post
18. Limiter Post Arm Ass'y
19. Reel Disk T Ass'y
20. Actuator Sub Brake
21. TS Brake 2 Ass'y
22. Idler Ass'y
23. Reel Disk S Ass'y
24. SS Brake Arm

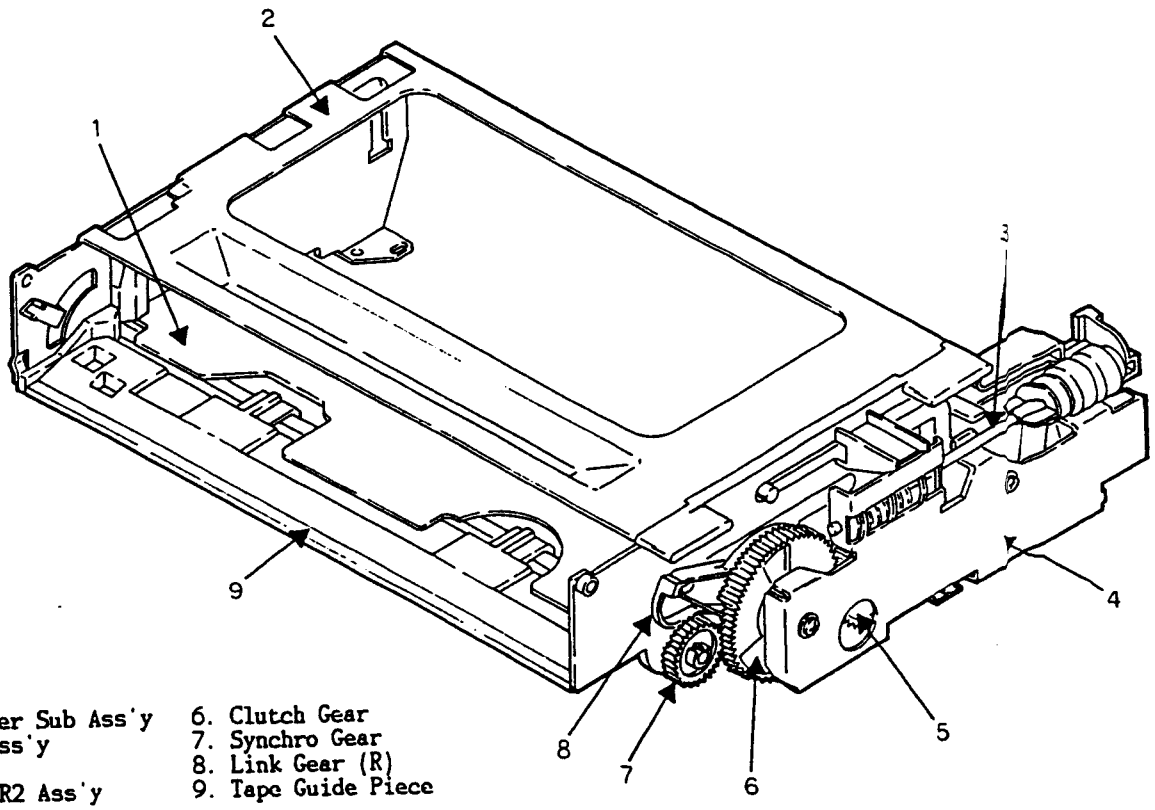
DECK PART LOCATIONS

(BOTTOM VIEW)



25. Cam 2
26. Deck PCB
27. Reel Belt
28. Capstan DD Unit
29. Worm Ass'y
30. Cam 1
31. Loading Lever 2 Ass'y
32. Slide Loading 2
33. Loading Gear I Ass'y
34. Loading Gear S Ass'y

(FRONT LOADING UNIT)



1. Cassette Holder Sub Ass'y
2. Top Bracket Ass'y
3. Worm Ass'y
4. Side Bracket R2 Ass'y
5. Wheel
6. Clutch Gear
7. Synchro Gear
8. Link Gear (R)
9. Tape Guide Piece

MECHANICAL ADJUSTMENTS

1. CONFIRMATION AND ADJUSTMENT

Read the following NOTED items before starting work.

* Place an object which weighs between 350g and 500g on the Cassette Tape to keep it steady when you want to make the tape run without the front loading unit. (Do not place an object which weighs over 500g.)
* When you activate the deck without the front loading unit, place a black sleeve over Q1101 (BOT) and Q1102 (EOT). EOT/BOT sensor will not function in this condition. Be sure to return the deck to it's original condition after repairs are completed.

1-1: CONFIRMATION AND ADJUSTMENT OF REEL DISK HEIGHT

1. Turn on the power and set to the STOP mode.
2. Set the master plane (JG022) and reel disk height adjustment jig (JG024) on mechanism framework, taking care not to scratch the drum, as shown in Fig. 1-1-A.
3. Confirm that the reel disk is lower than "A" of the reel disk height adjustment jig (JG024) on the master plane and higher than "B" as shown in Fig. 1-1-B. If it is not, adjust to less than 7.5mm +0, −0.2mm with the height adjustmenr washer.
4. Perform the same adjustment for the other reel.

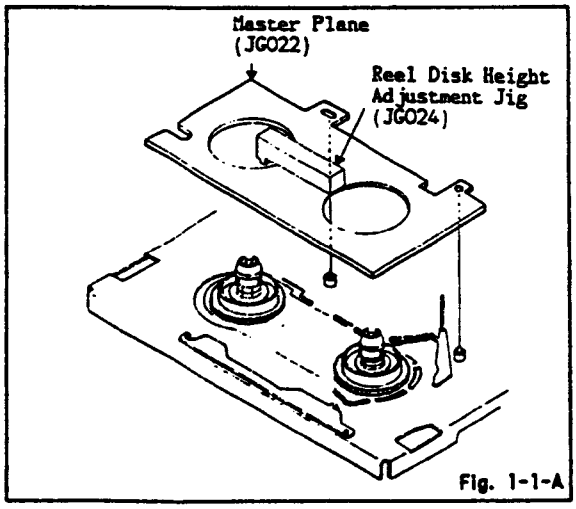


Fig. 1-1-A

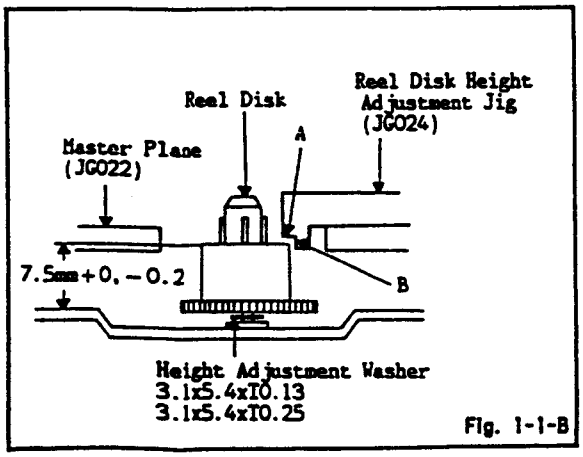


Fig. 1-1-B

1-2: CONFIRMATION AND ADJUSTMENT OF TENSION POST POSITION

1. Turn on the power and set to the PLAY mode by using the tension post adjustment jig (JG036).
2. Move the tension band adjuster to the "A" or the "B" direction to set tension post adjustment jig red line to the round edge of the tension post. (Refer to Fig. 1-2)
3. Confirm that the video tape is not curling at the flange of P1 post or is not running on flanges.

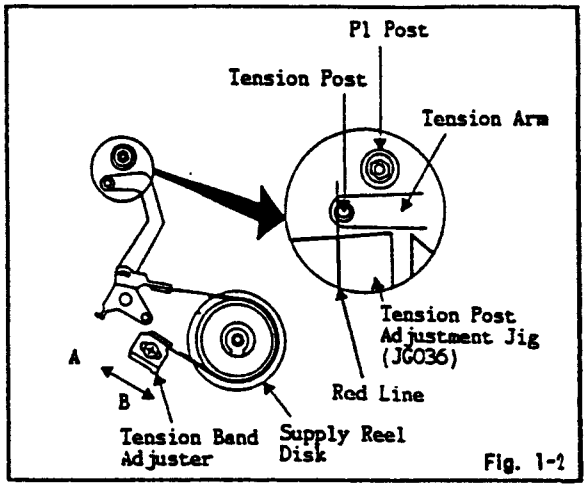


Fig. 1-2

1-3: CONFIRMATION AND ADJUSTMENT OF BACK TENSION ON PLAYBACK

1. Load a video tape recorded in standard speed mode. Set the unit to the PLAY mode.
2. Install the tentelometer as shown in Fig. 1-3-A. Confirm the value is within 25~35gr/cm at this time
3. Adjust when it does not satisfy the above items. Set the tension arm spring to "A" direction when the torque meter indicates more than 35gr/cm. (Refer to Fig. 1-3-B)
   Set the tension arm spring to "B" direction when the torque meter indicates less than 25gr/cm. (Refer to Fig. 1-3-B)

※ IN CASE OF USING A CASSETTE TYPE TORQUE METER.

1. After adjustment, confirm and adjust the tension post position (Refer to Item 1-2) for the tension arm, install the cassette type torque meter (JG100) and set to the PLAY mode.
2. Confirm that the left hand side tension value of the torque meter is 45~60gr/cm for the standard mode tape.

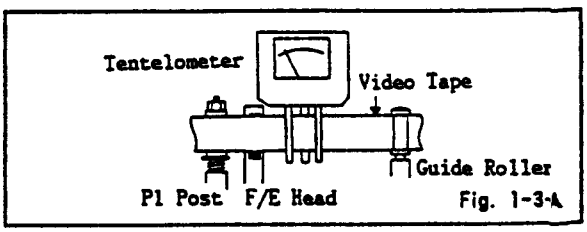


Fig. 1-3-A

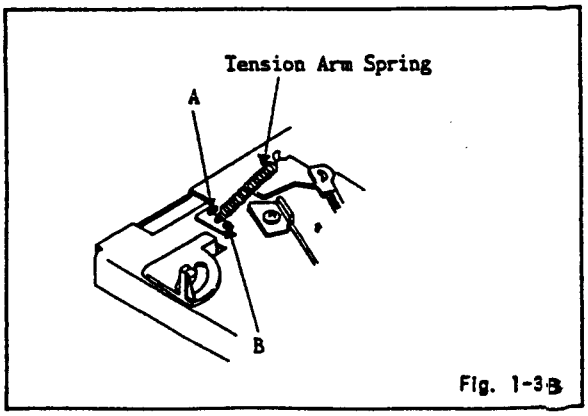


Fig. 1-3-B

MECHANICAL ADJUSTMENTS

1-4: CONFIRMATION OF FAST FORWARD TORQUE

1. Set torque gauge (JG0002G) on take-up reel disk, and place unit in FAST FORWARD mode. **(Refer to Fig. 1-4)**
2. Confirm that torque is more than 800gr/cm.

NOTE

After setting the torque gauge on the reel disk, hold the gauge in place. Push the FAST FORWARD button and the reel disk will begin to turn.

1-5: CONFIRMATION OF REWIND TORQUE

1. Operate within 4 or 5 seconds after the reel disk begins to turn.
2. Set torque gauge (JG0002G) on supply reel Disk, and place the unit in REWIND mode. **(Refer to Fig. 1-4)**
3. Confirm that torque is more than 800gr/cm.

NOTE

After setting the torque gauge on the reel disk, hold the gauge in place. Push the REWIND button and the reel disk will begin to turn.

1-6: CONFIRMATION OF PLAYBACK TAKE-UP TORQUE

1. Set the torque gauge (JG0002F) on the rewind reel disk, then check PB mode.
2. Make sure that the torque covers the range, 60~150gr/cm.

1-7: CONFIRMATION OF REEL BRAKE TORQUE

(Take-Up Reel Brake) **(Refer to Fig. 1-4)**

1. Set to STOP mode.
2. Set the torque gauge (JG0002G) to the take-up reel and turn it counterclockwise.
3. Confirm that it is more than 200gr/cm at that time.

(Supply Reel Brake) **(Refer to Fig. 1-4)**

1. Set to STOP mode.
2. Set the torque gauge (JG0002G) to the supply reel and turn it clockwise.
3. Confirm that it is more than 200gr/cm at that time.

NOTE

Separate the idler from the reel and confirm the brake torque.

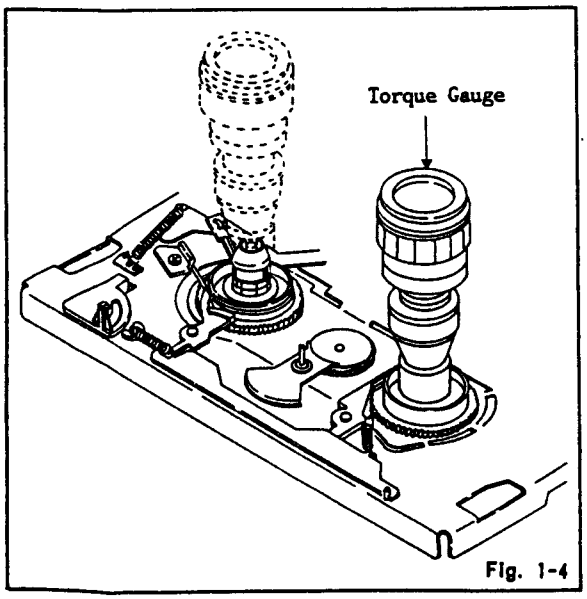


Fig. 1-4

NOTE

If the torque value checked is out of tolerance, replace the appropriate parts as follows.

Check Items	Replace Parts
1-4	Idler Ass'y or Reel Belt
1-5	Idler Ass'y or Reel Belt
1-6	Idler Ass'y or Reel Belt or Clutch Ass'y
1-7	Main Brake T Ass'y or Main Brake S Ass'y

2. TAPE RUNNING CONFIRMATION AND ADJUSTMENT

Tape running is adjusted precisely at the factory. Normally, it is not necessary to make adjustments. It is necessary to confirm and make adjustments when the parts of the tape running mechanism are replaced because of extensive usage or failure.

2-1: GUIDE ROLLER

1. Connect CH-1 on the oscilloscope to **TP4005 (PB Envelope)** and CH-2 to **TP2001 (SW Pulse)**.
2. Insert the VHS alignment tape (JG001) into the unit.
3. Carry out this adjustment in PLAY mode.
4. Trigger with SW pulse and observe the envelope. **(Refer to Fig. 2-1-A)**
5. Adjust the guide roller height while observing the envelope, and make the envelope flat. Adjust the envelope so that the flatness will not be affected even when the tracking control button is pressed. (Use the adjustment screwdriver JG005).
6. Press and hold the tracking control button and (at the point that the envelope waveform starts to reduce) adjust the envelope so that its A:B ratio is better than 3:2. **(Refer to Fig. 2-1-B)**
7. Adjust the PG shifter **(ELECTRICAL ADJUSTMENTS: ITEM 3-1)** in the PLAY mode.

NOTE

After adjustment, confirm and adjust A/C head tilt. **(Refer to Item 2-2)**

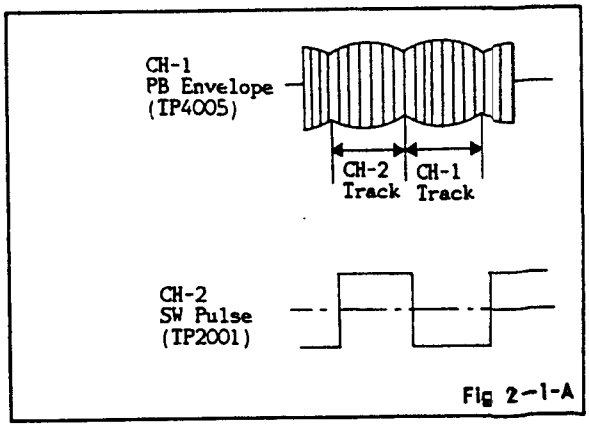


Fig 2-1-A

MECHANICAL ADJUSTMENTS

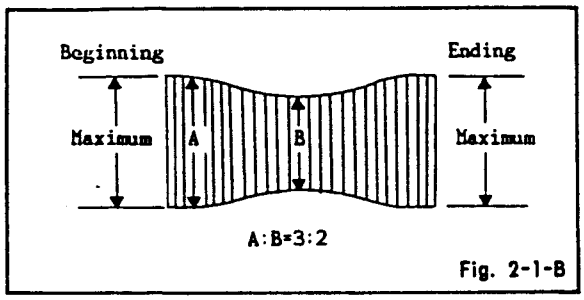


Fig. 2-1-B

2-2: CONFIRMATION AND ADJUSTMENT OF A/C HEAD TILT

When the tape is running abnormally, perform the following adjustments.

1 Insert a new tape and play back.
2. Confirm that there is no crease on the tape between the guide post and guide roller(R) and the tape is running smoothly. (It is absolutely impossible to get satisfactory sound if the tape is distorted between the A/C head and guide post.)
3. If the tape still does not run smoothly, turn the screw ① and adjust the tilt of the A/C head. Do not move the guide post. **(Refer to Fig. 2-2)**

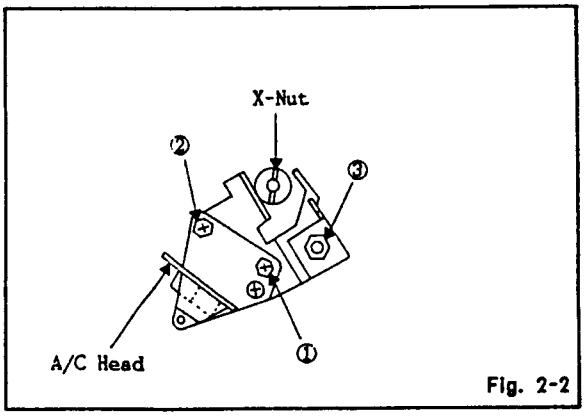


Fig. 2-2

2-3: ADJUSTMENT OF A/C HEAD HEIGHT AND AZIMUTH

1. Play back a VHS alignment tape (JG001E) and observe the waveform at the audio output terminal.
2. Turn the screw ② slowly to change the height of the A/C head. Adjust the height so that the audio output becomes maximum. **(Refer to Fig. 2-2)**
3. Adjust the nut ③, **(Refer to Fig. 2-2)** until the height of the A/C head reaches the position against the tape as shown in **Fig. 2-3.**

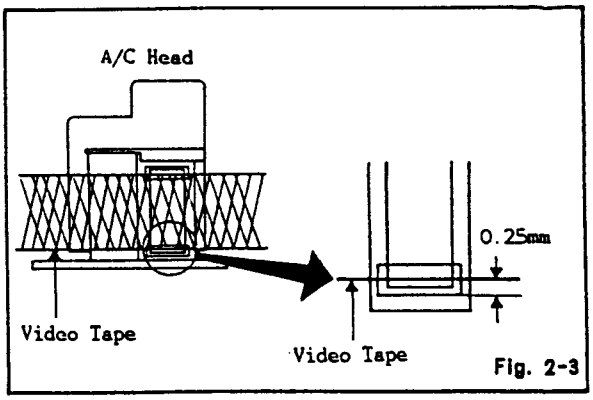


Fig. 2-3

2-4: TAPE RUNNING ADJUSTMENT

1. Adjust the height of reel disk. **(Refer to item 1-1)**
2. Confirm and adjust tension post position. **(Refer to item 1-2)**
3. Adjust the guide roller. **(Refer to item 2-1)**
4. Adjust the A/C head tilt. **(Refer to item 2-2)**
5. Adjust the A/C head height and azimuth. **(Refer to item 2-3)**
6. Connect CH-1 on the oscilloscope to **TP4005** and CH-2 to **TP2001**. Insert the VHS alignment tape (JG001E) into the unit. Set the tracking control to the center position. Turn the X-nut using the X-nut adjustment screwdriver (JG021) **(Refer to Fig. 2-2)**. Adjust the X-nut for the envelope to be maximum. **(Refer to Fig. 2-1-A)**

ELECTRICAL ADJUSTMENTS

(VCR SECTION)

3. ADJUSTMENT PROCEDURE

Read and perform these adjustments when repairing the circuits or replacing electrical parts or PCB assemblies.

CAUTION

Inferior silicon grease can damage IC's and transistors.
When replacing IC's or transistors, use only specified silicon grease (YG6260M).
Remove all old silicon before applying new silicon.

3-1: PG SHIFTER

CONDITIONS

MODE - PLAYBACK
Input Signal - Alignment Tape (JG001E)

INSTRUCTIONS

1. Connect CH-1 on the oscilloscope to **TP2001** and CH-2 to **pin 19 of J4501.**
2. Adjust **VR2001** so that the waveform of the oscilloscope measures 6.5±0.5(H) at both leading and trailing edges. **(Refer to Fig. 3-1-A, B)**

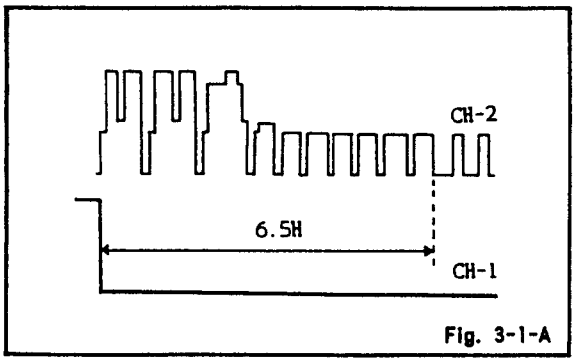


Fig. 3-1-A

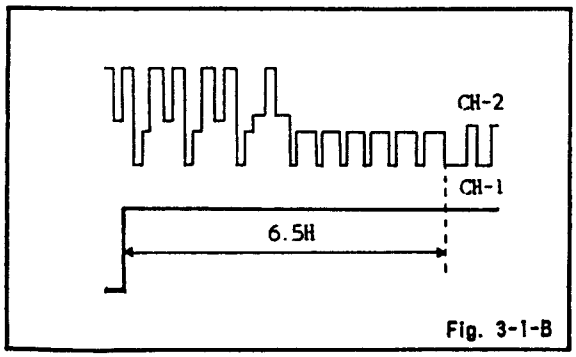


Fig. 3-1-B

3-2: PB Y LEVEL

CONDITIONS

MODE - PLAYBACK
Input Signal - Alignment Tape (JG001F)

NOTE

VIDEO OUT (CD8008) of the unit should be terminated with 75 ohm load.

INSTRUCTIONS

1. Connect the oscilloscope to **pin 19 of J4501.**
2. Adjust **VR4001** so that the signal becomes 2.0±0.05Vp-p. **(Refer to Fig. 3-2)**

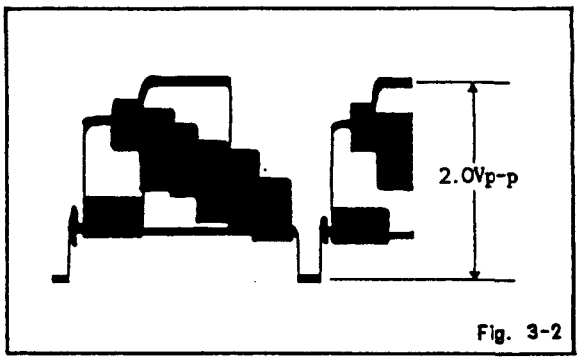


Fig. 3-2

3-3: E-E LEVEL

CONDITIONS

MODE - STOP
Input Signal - PAL Color Bar

NOTE

VIDEO OUT (CD8008) of the unit should be terminated with 75 ohm load.

INSTRUCTIONS

1. Connect the color bar generator to **pin 20 of J4501.**
2. Connect the oscilloscope to **TP4001.**
3. Adjust **VR4004** so that the waveform measures 0.5±0.025Vp-p. **(Refer to Fig. 3-3)**

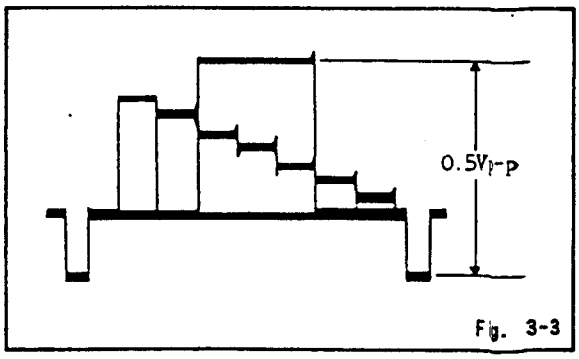


Fig. 3-3

ELECTRICAL ADJUSTMENTS

3-4: CARRIER AND DEVIATION

(CARRIER)

CONDITIONS

MODE - STOP
Input Signal - No Signal

INSTRUCTIONS

1. Connect the frequency counter to **TP4004.**
2. Adjust **VR4003** so that the carrier frequency 3.8MHz ± 20KHz.

(DEVIATION)

CONDITIONS

MODE - Self (RECORD and PLAYBACK)
Input Signal - PAL Color Bar

INSTRUCTIONS

1. VIDEO OUT (CD8008) of the unit should be terminated with 75 ohm load.
2. Input the color bar (with the white 100% level) to the pin 20 of J4501.
3. Connect the oscilloscope to **TP4201.**
4. Record the color bar as indicated above and then play back the recorded part.
5. Check that the playback output level is 1.0±0.05Vp-p. **(Refer to Fig. 3-4)**
6. When it is out of the specification, adjust **VR4005** and repeat (4),(5) and (6).

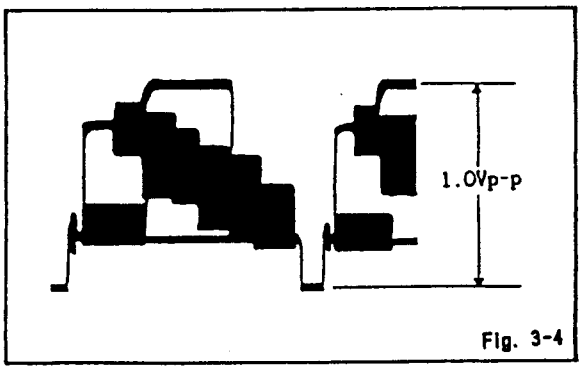


Fig. 3-4

3-5: AUDIO BIAS

CONDITIONS

MODE - RECORD
Input Signal - Audio Signal : No Signal

INSTRUCTION

Connect the AC voltmeter as shown, then adjust the voltage to 3.3±0.1mVrms with **VR5002.(Refer to Fig. 3-5)**

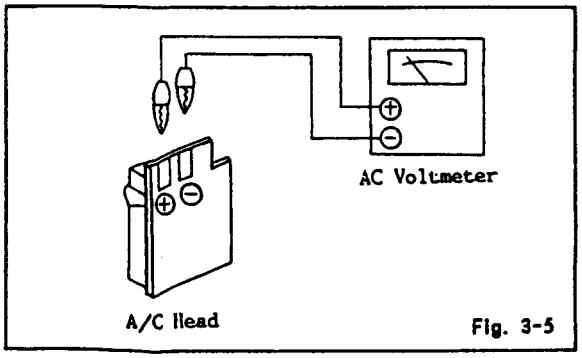


Fig. 3-5

3-6: PB AUDIO LEVEL

CONDITIONS

MODE - Self (RECORD and PLAYBACK)(SP MODE)
Input Signal - Audio Signal : 1KHz 500mVrms
Video Signal : PAL Color Bar

NOTE

AUDIO OUT (CD8008) of the unit should be terminated with 47K ohm load.

INSTRUCTIONS

1. Connect the color bar generator to **pin 20 of J4501.**
2. Connect the audio generator to **pin 2 of J4501.**
3. Connect the AC voltmeter to **AUDIO OUT (CD8008).**
4. After the input of audio signal and video signal, proceed with the recording.
5. Play back the recorded section and adjust **VR5001** so that the AC voltmeter value is 500±20mVrms.

3-7: CLOCK

CONDITIONS

MODE - STOP
POWER ON
CLOCK SET

NOTE

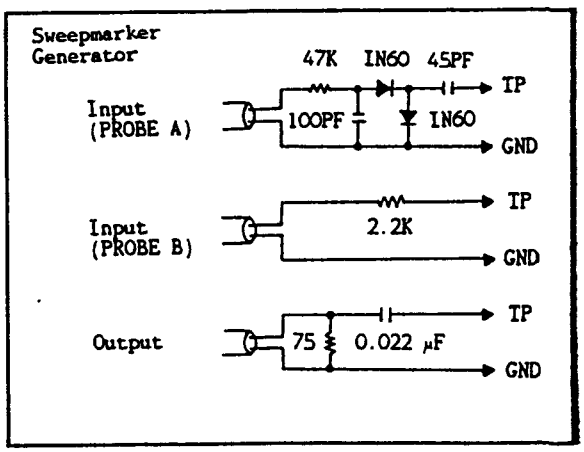
Quartz timer should be supplied with power for at least 30 minutes before the adjustment.

INSTRUCTIONS

1. Put the detectable area of quartz timer close to **X1001.**
2. Adjust **TC1001** so that the difference is within 0.15 sec.

NOTE

For adjusting of VCO,TRAP and AFT, connect input and output terminals of the sweepmarker generator to the circuit as shown below, then adjust it.



ELECTRICAL ADJUSTMENTS

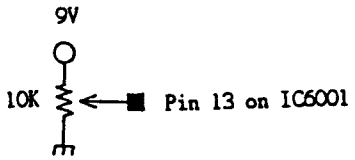
3-8: VCO

CONDITION

MODE - STOP

INSTRUCTIONS

1. Connect the output of sweepmarker generator to **IC6001 side of R6009.**
2. Connect the input of sweepmarker generator to **pin 17 on IC6001.** (PROBE A)
3. Connect a 10K ohm variable resistor to IF AGC terminal **(pin 13 on IC6001)**, 9V line and ground, then adjust to make the waveform of the oscilloscope readable.



4. Adjust **L6010** until the waveform marker (38.9MHz) becomes as shown in **Fig. 3-6**

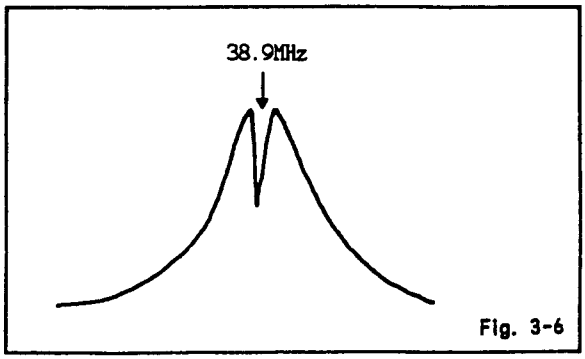


Fig. 3-6

3-9: TRAP

CONDITION

MODE - TUNER MODE

INSTRUCTIONS

1. Connect the **pin 11 of CP6001** to the output of the sweepmarker generator.
2. Connect the saw filter(CF6001) side of the condenser(C6025), to the oscilloscope. (PROBE A)
3. Adjust **L6014** until the marker of 32.4MHz will be same as shown in **Fig. 3-7.**

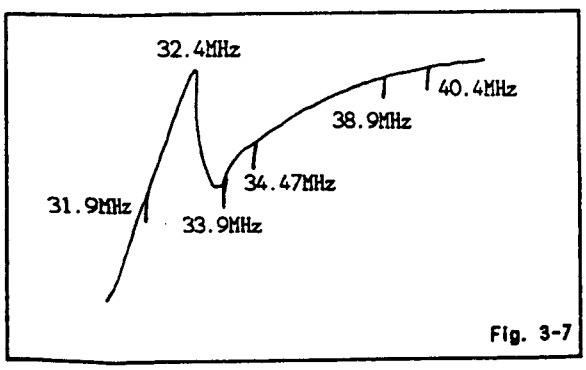


Fig. 3-7

3-10: AFT

CONDITIONS

MODE - STOP
BAND - UHF POSITION

INSTRUCTIONS

1. Connect the output of sweepmarker generator to **IC6001 side of R6009.**
2. Connect the input of sweepmarker generator to **TP6010.** (PROBE B)
3. Adjust **L6011** until the waveform marker (38.9MHz) becomes as shown in **Fig. 3-8.**
4. Disconnect the sweepmarker generator and the oscilloscope.
5. Connect the generator(38.9MHz) to the **TP6009** through 2.2K ohm and connect the DC voltmeter to **TP6010.**
6. Adjust **L6011** so that voltage at AFT switch ON is as much as one at AFT switch OFF.

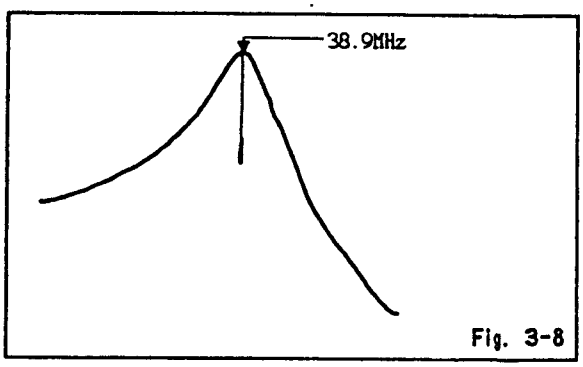


Fig. 3-8

3-11: RF AGC

CONDITION

MODE - STOP
AFT SW : ON MODE
Input Signal : Monochrome Pattern

INSTRUCTIONS

1. Connect the pattern generator to **pin 20 of J4501.**
2. Connect the DC voltmeter to **TP6008.**
3. Set input field strength to 80dB μ.
4. Adjust **VR6001** so that the voltage is equal to 3.5 ± 0.1V.

3-12: COLOR LEVEL

CONDITIONS

MODE - STOP
AFT SW : ON MODE
Input Signal : PAL Color Bar

NOTE

VIDEO OUT (CD8008) of the unit should be terminated with 75 ohm load.

INSTRUCTIONS

1. Connect the color bar generator to **pin 20 of J4501.**
2. Connect the oscilloscope to **pin 19 of J4501.**
3. Adjust **VR6002** so that the magenta level is $45 \pm 5\%$ when Y-level is 100%. **(Refer to Fig. 3-9)**

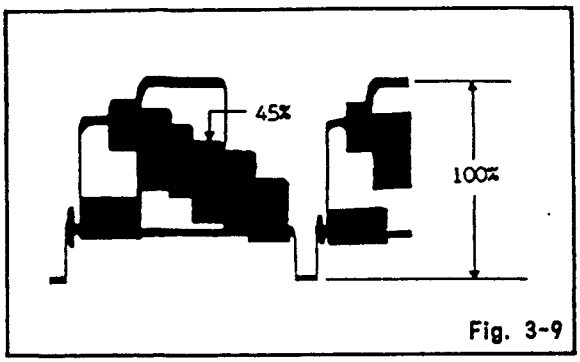
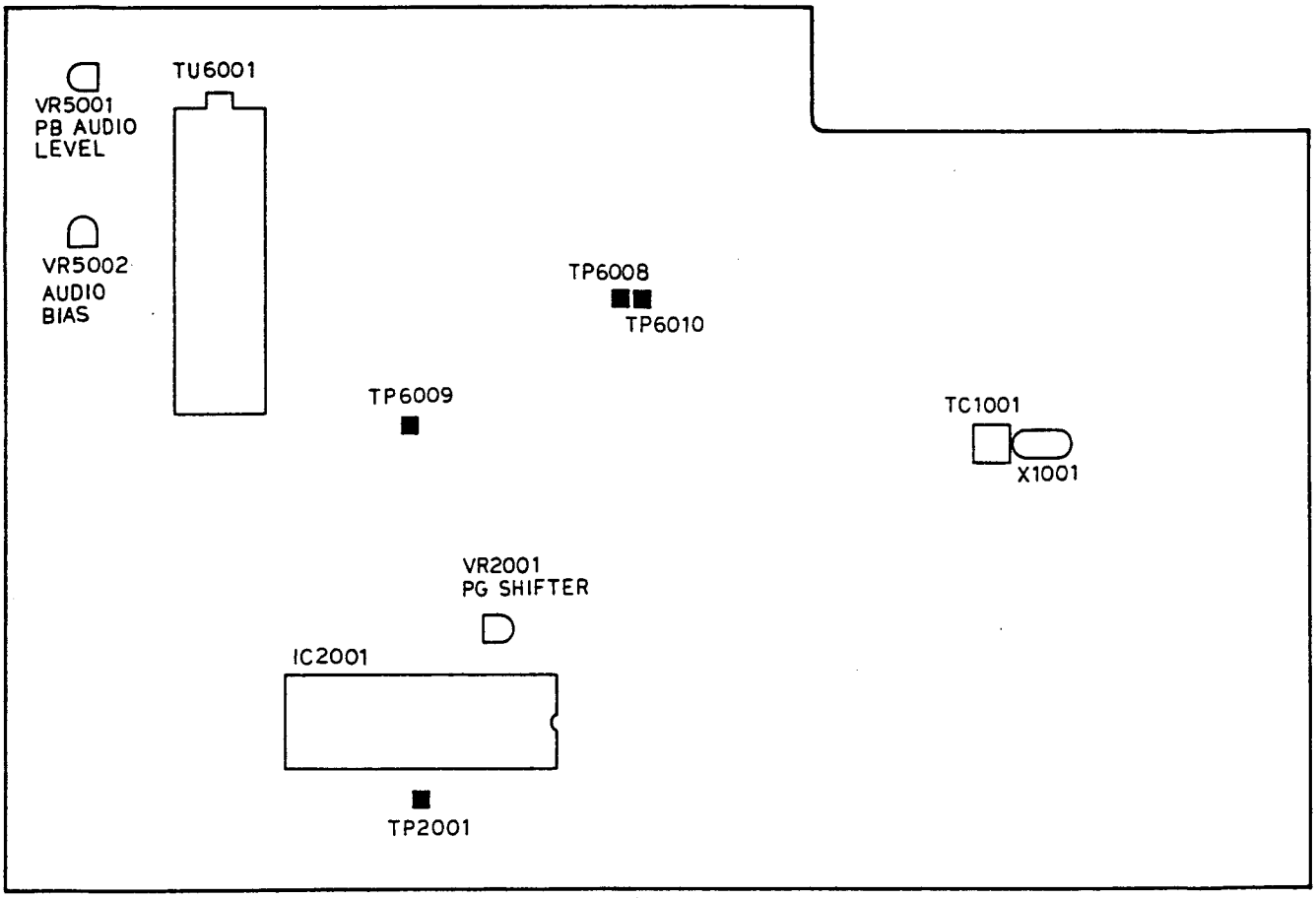
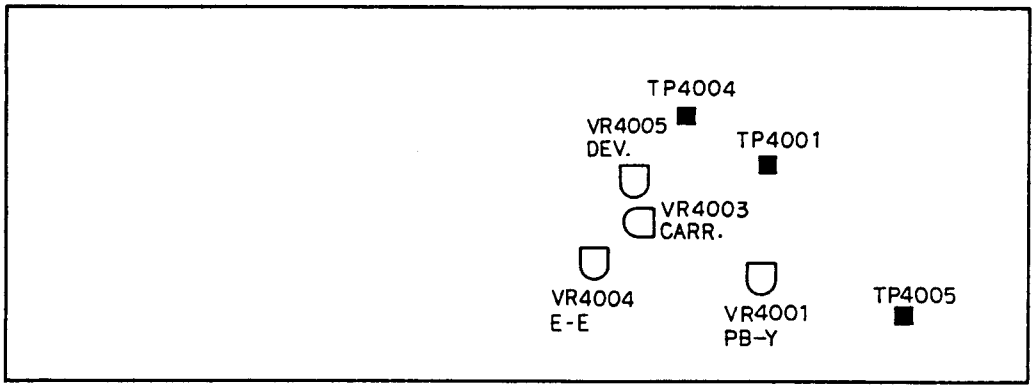


Fig. 3-9

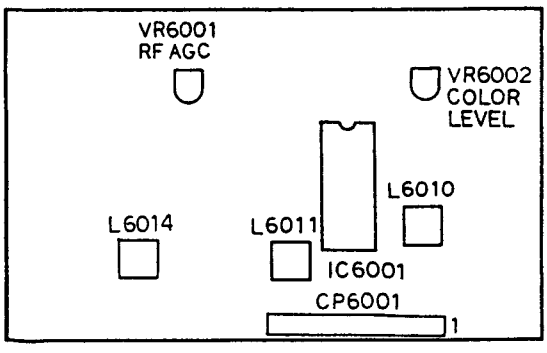
MAJOR COMPONENTS LOCATION GUIDE



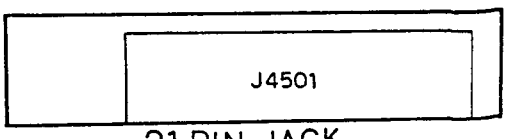
MAIN



Y/C



IF



21 PIN JACK

ELECTRICAL ADJUSTMENTS

(TV SECTION)
4. BASIC ADJUSTMENTS

4-1: CUT OFF

1. Receive the Color Bar Pattern.
2. Set the AFT switch ON position.
3. Using the remote control, set bright and contrast to minimum position.
4. Connect the oscilloscope to **TP024**.
5. Adjust the screen control until voltage is 150VDC. **(Refer to Fig. 4-1)**

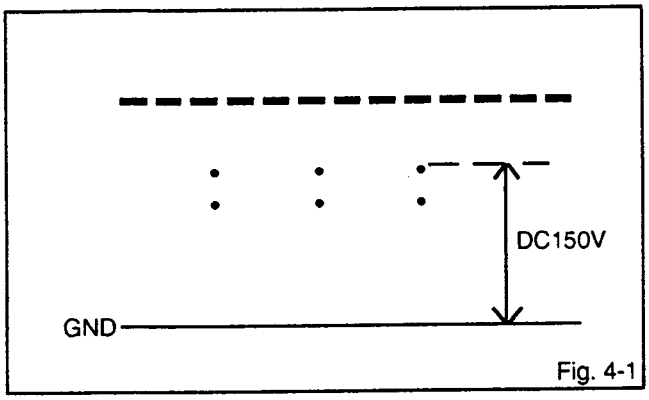


Fig. 4-1

4-2: FOCUS

1. Receive the broadcasting signal.
2. Adjust the focus control until picture is distinct.

4-3: VERTICAL SIZE

1. Receive the Crosshatch Pattern from the color bar generator.
2. Adjust the bright and contrast controls until the crosshatch pattern is distinct.
3. Adjust **VR401** until the center of crosshatch is square.
4. Receive broadcasting signal, then confirm picture is normal.

4-4: VERTICAL POSITION

1. Receive the Color Bar Pattern.
2. Adjust **VR402** until horizontal line of the color bar comes to approximate center of the CRT.

4-5: HORIZONTAL POSITION

1. Receive the Color Bar Pattern.
2. Adjust **VR403** until the color width of both of screen edges are equal.
3. Receive broadcasting signal, then confirm picture is normal.

4-6: SUB BRIGHT

NOTE

Proceed this adjustment in 20 minutes after the Power ON.

1. Receive the Monochrome Pattern.
2. Using the remote control, set bright and contrast to normal position.
3. Adjust **VR171** until 0% of gray scale will be dim completely.

4-7: SUB COLOR

1. Receive the color bar pattern.
2. Set the AFT switch ON position.
3. Connect the oscilloscope to **TP022**.
4. Adjust the VOLTS RANGE VARIABLE knob of the oscilloscope until the range between white 100% and 0% is set to four scales on the screen of the oscilloscope.
5. Adjust **VR170** until the red color level is adjusted to 75% for the white level. **(Refer to Fig. 4-2)**

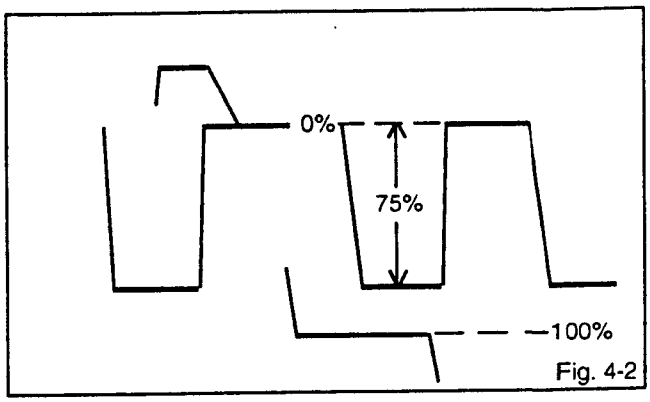
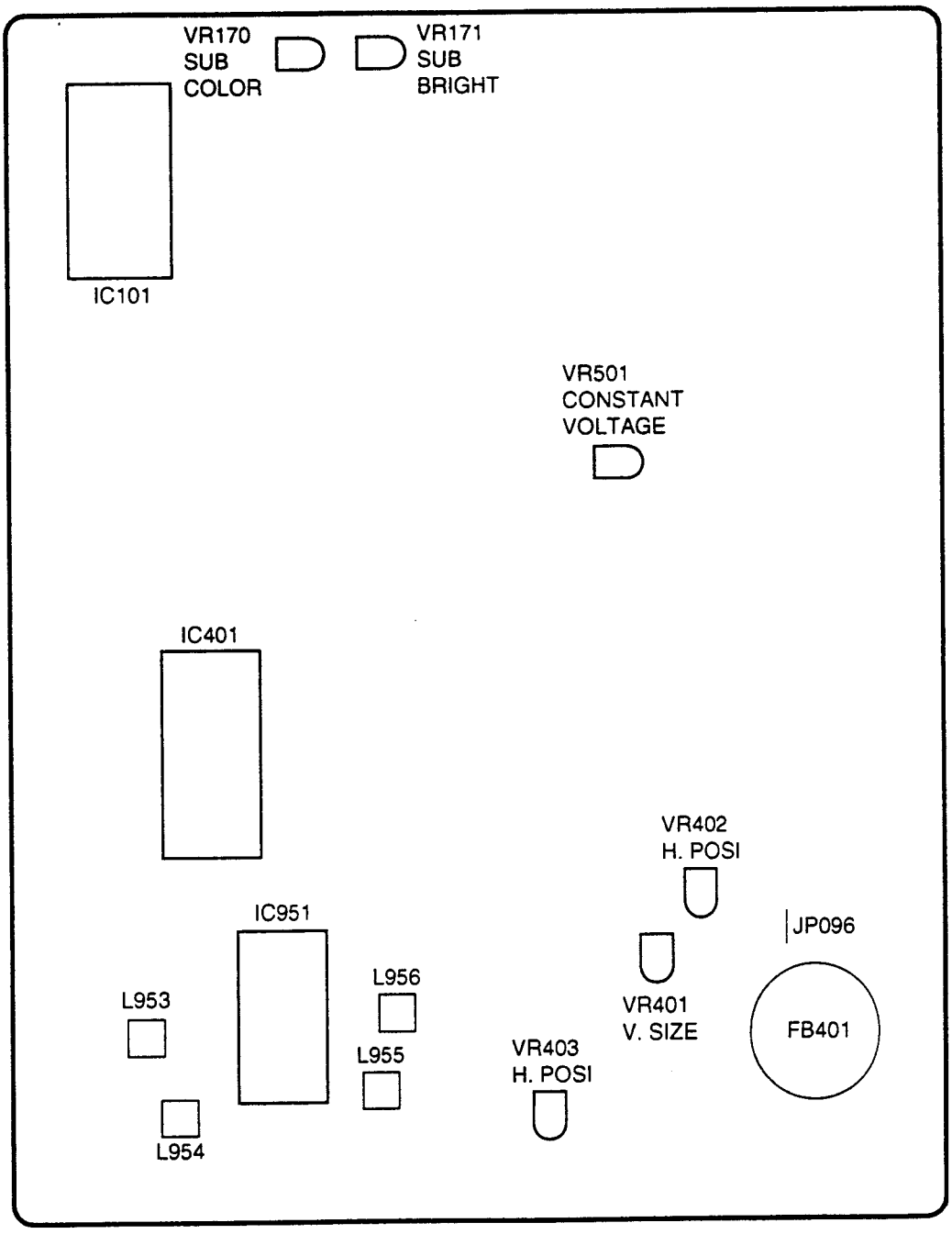


Fig. 4-2

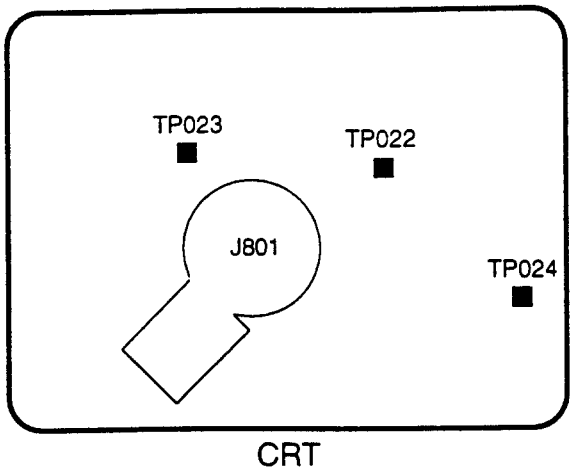
4-8: CONSTANT VOLTAGE

1. Receive the Monochrome Pattern.
2. Set the AFT switch ON position.
3. Connect the digital voltmeter to **TP501**.
4. Adjust **VR501** until the voltage is 117V.

MAJOR COMPONENTS LOCATION GUIDE

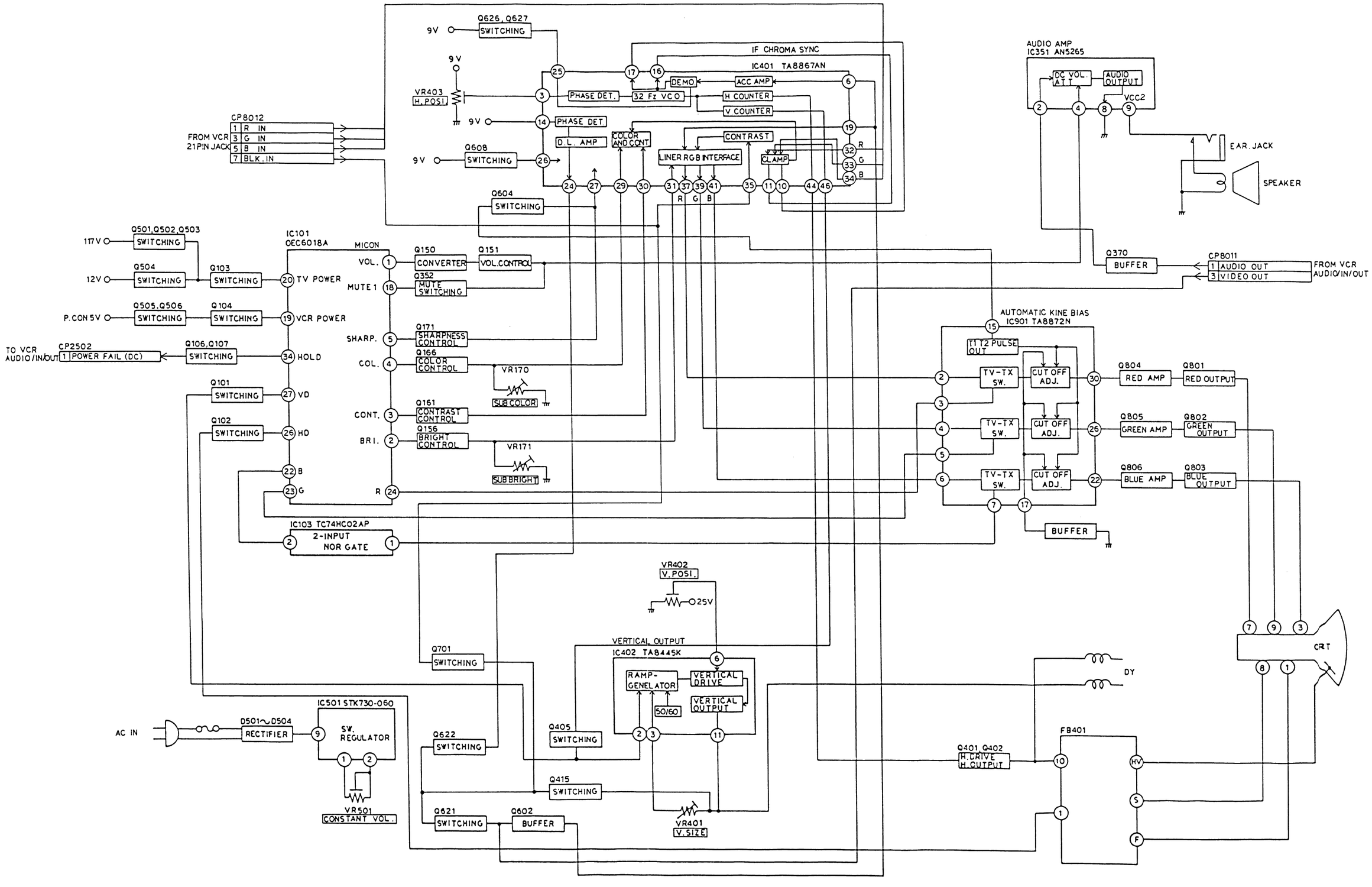


MAIN

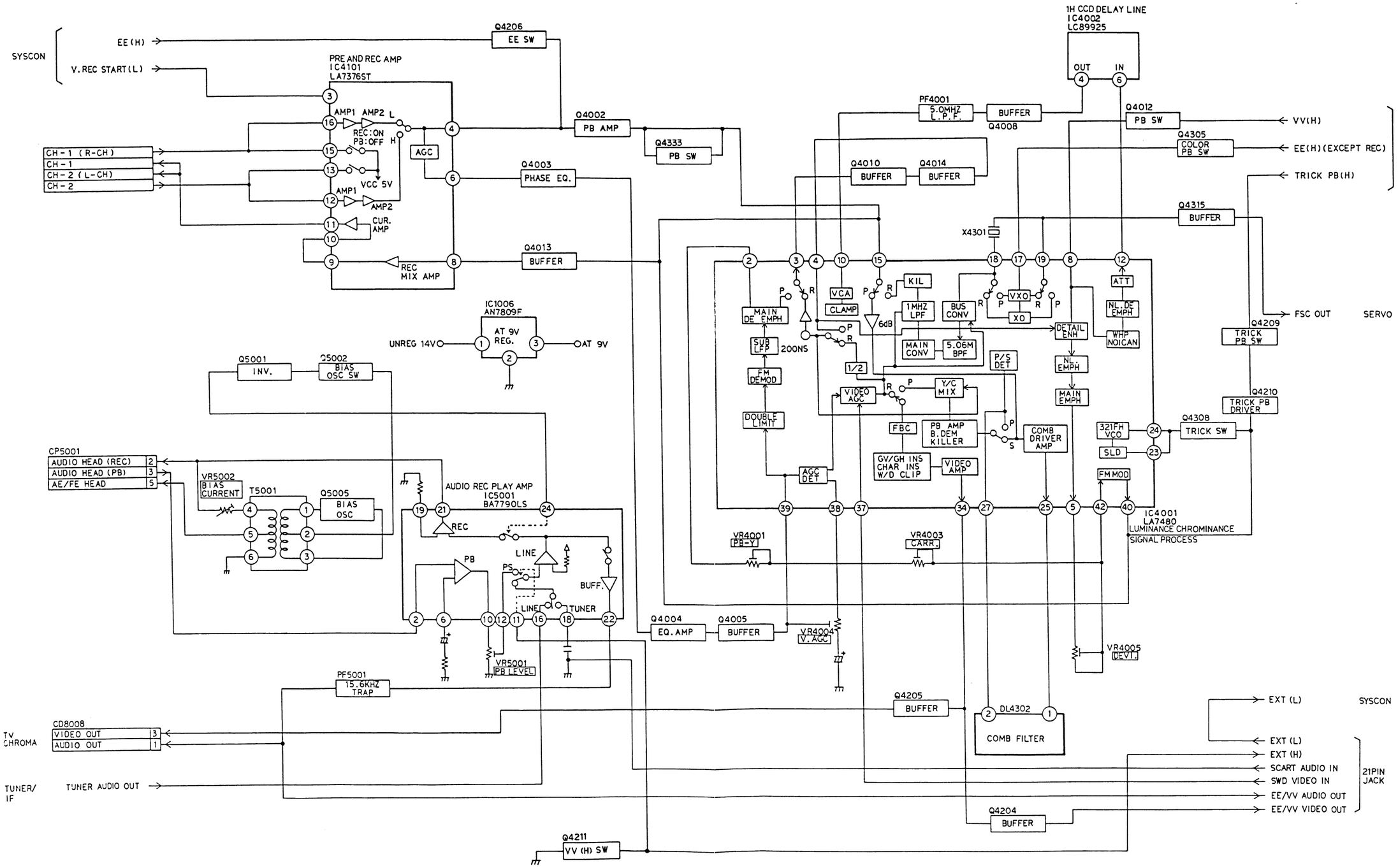


CRT

TV BLOCK DIAGRAM

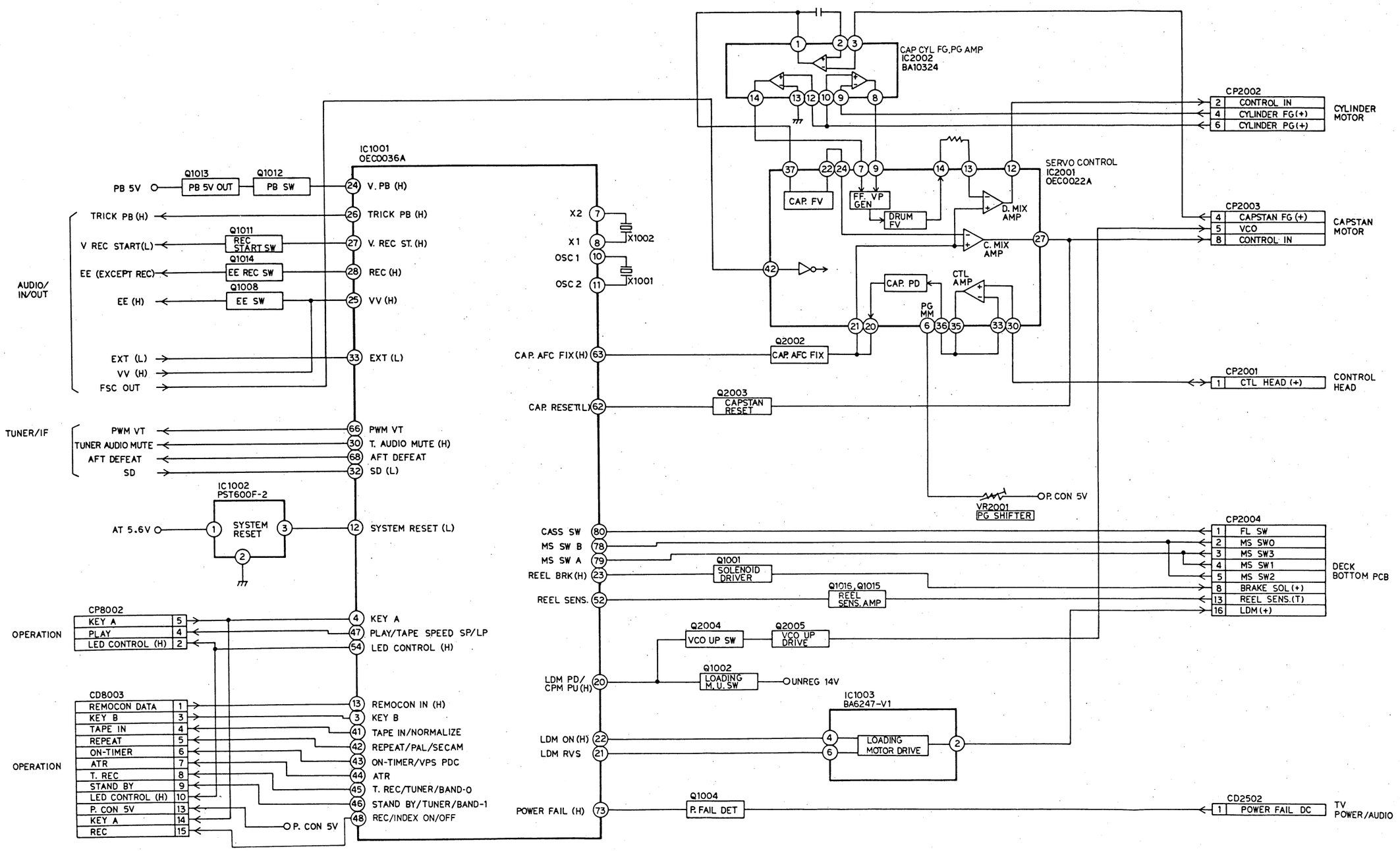


VCR Y.C./HEAD AMP/AUDIO BLOCK DIAGRAM



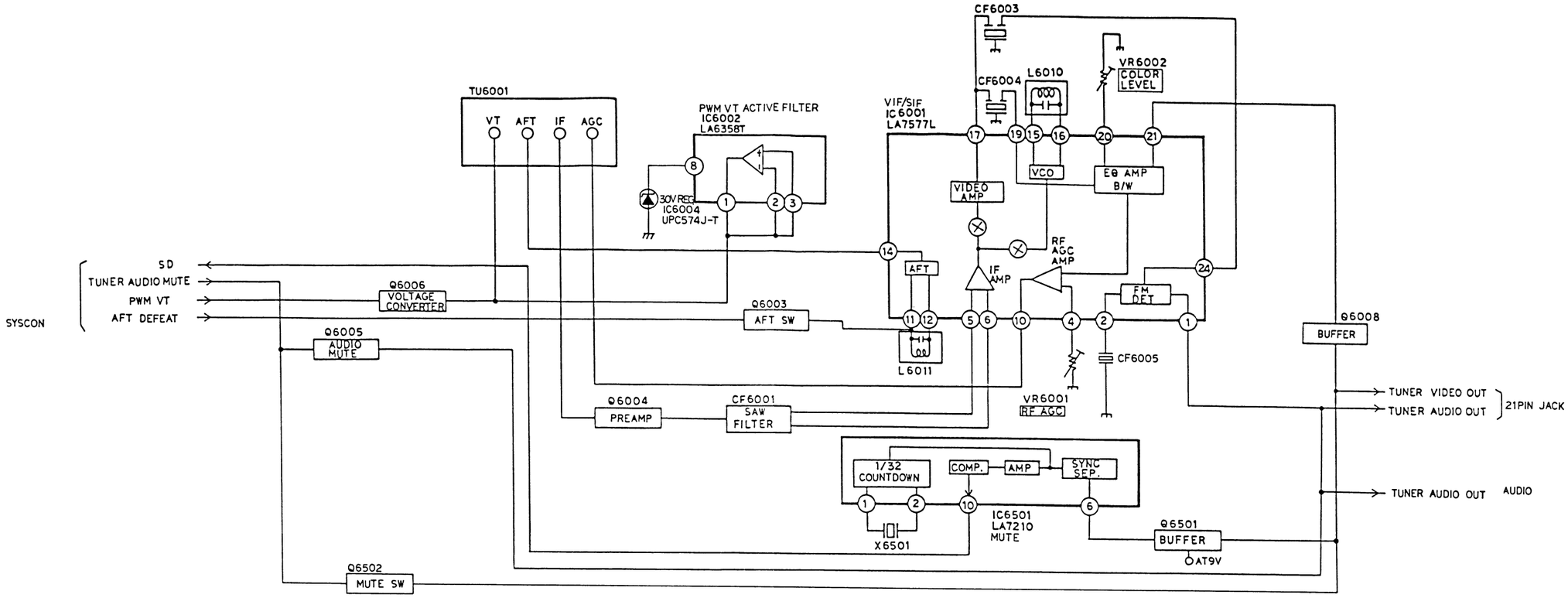
2-4761

VCR SYSTEM CONTROL/SERVO BLOCK DIAGRAM

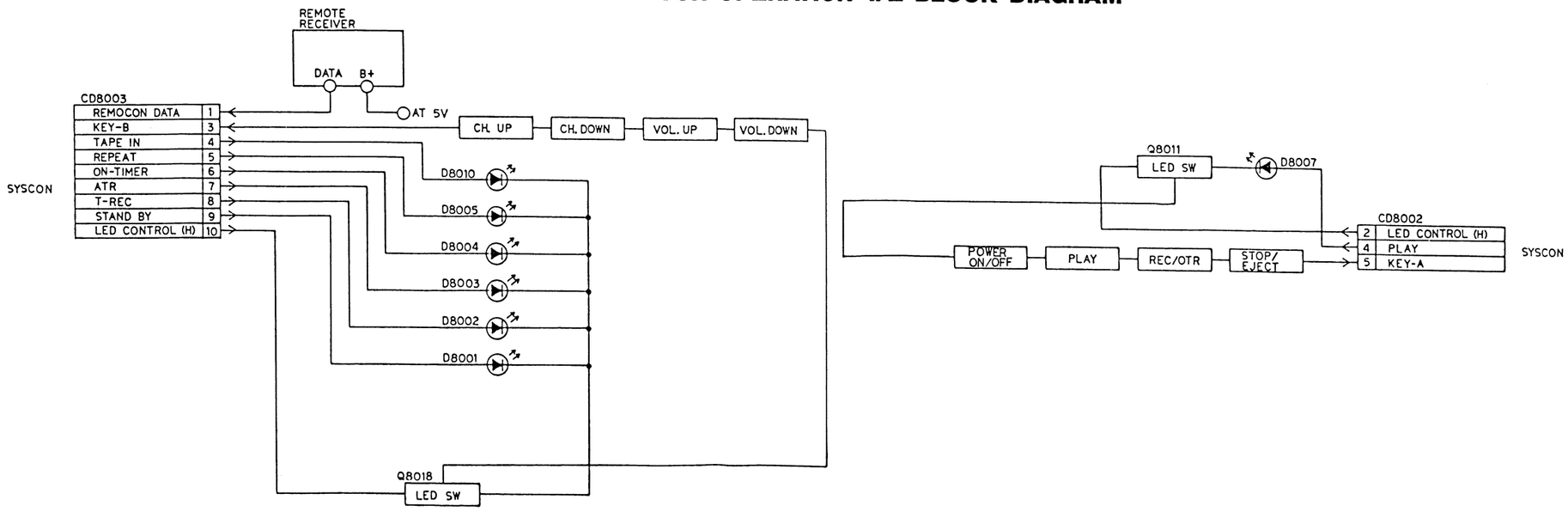


2-4554

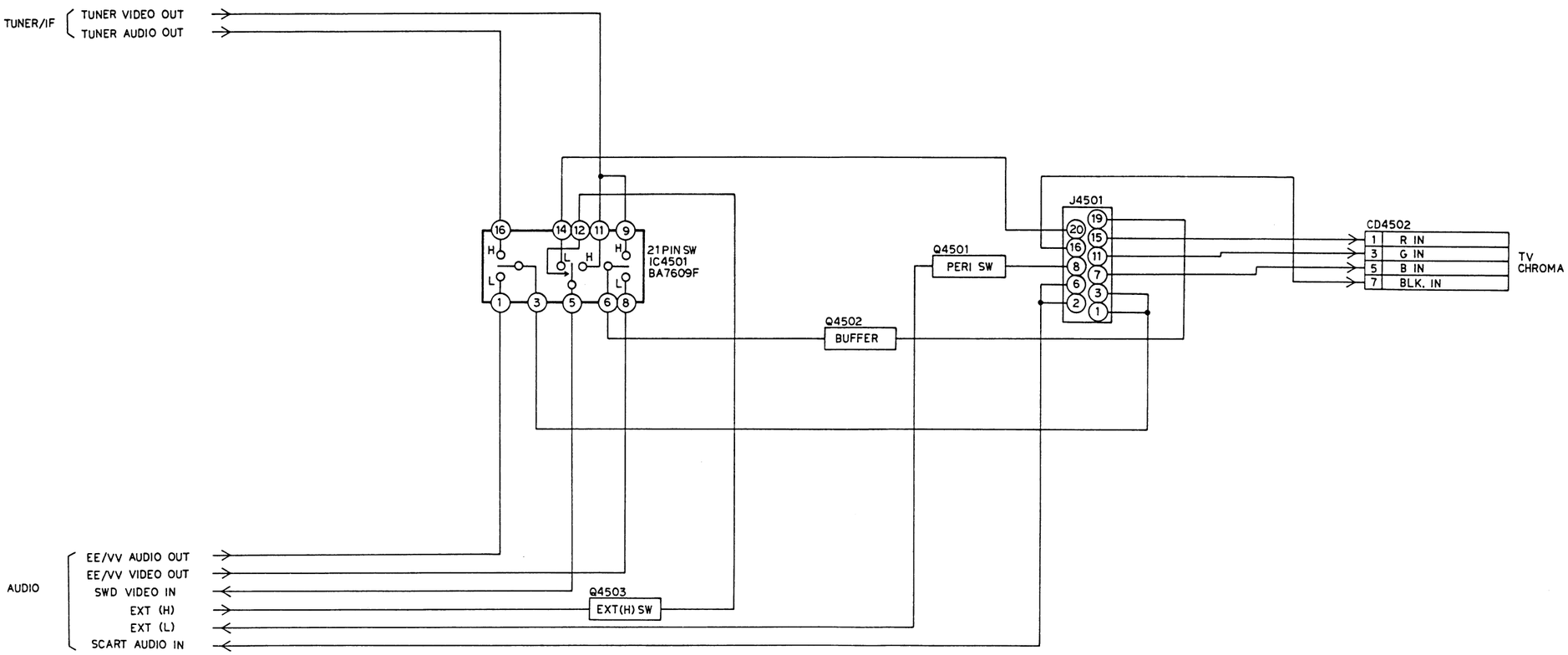
VCR TUNER/IF BLOCK DIAGRAM



VCR OPERATION 1/2 BLOCK DIAGRAM

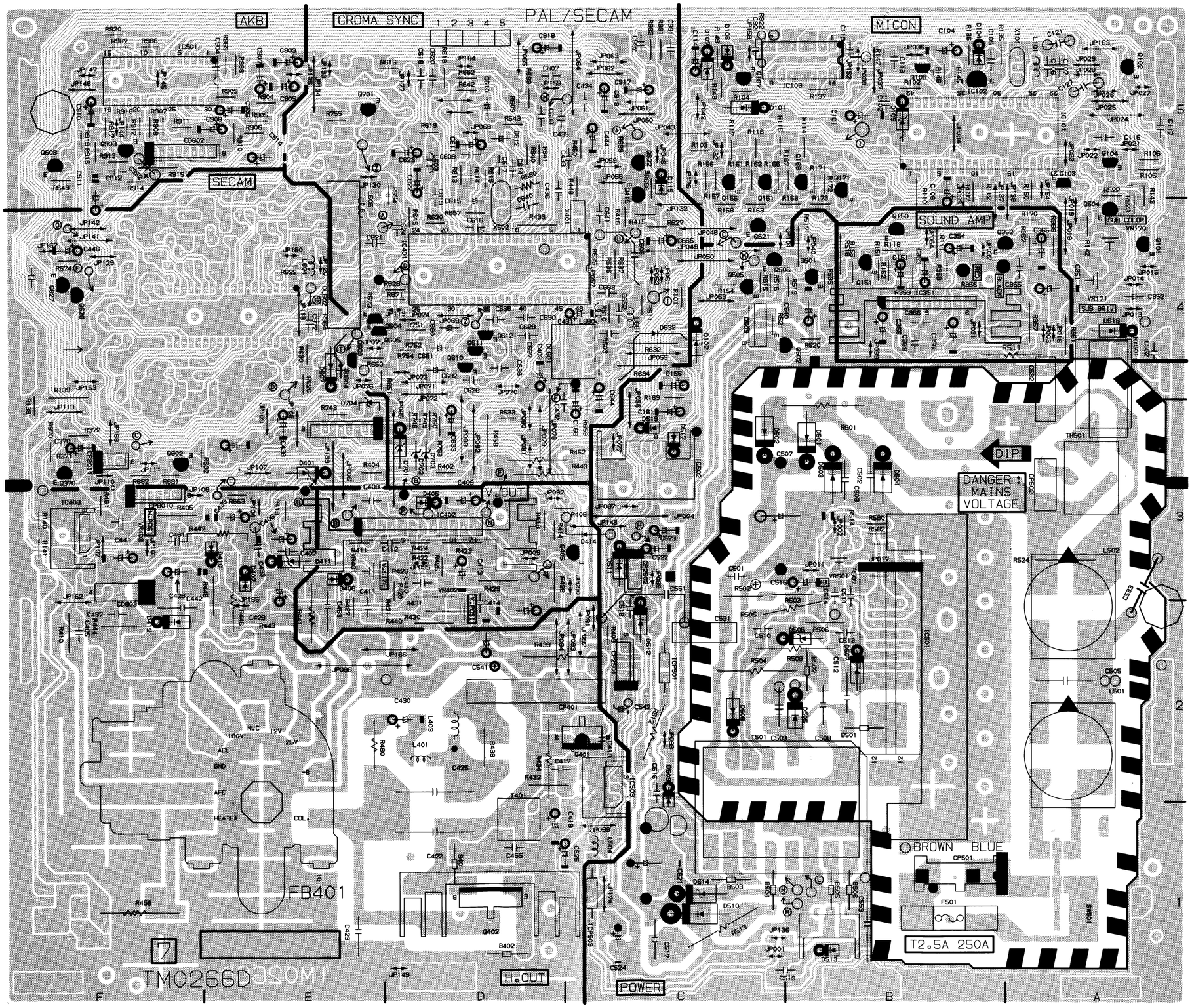


VCR 21PIN JACK BLOCK DIAGRAM



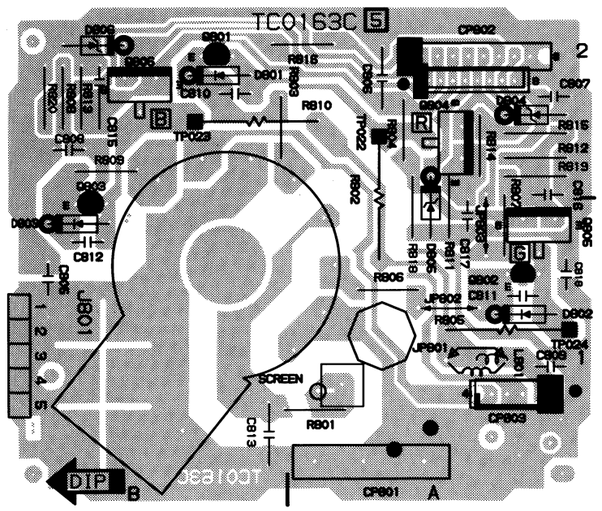
2-4715

TV PRINTED CIRCUIT BOARD
MAIN

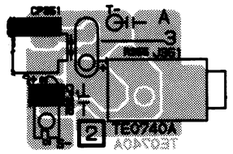


TV/VCR PRINTED CIRCUIT BOARDS

CRT

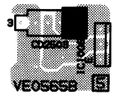


EARPHONE



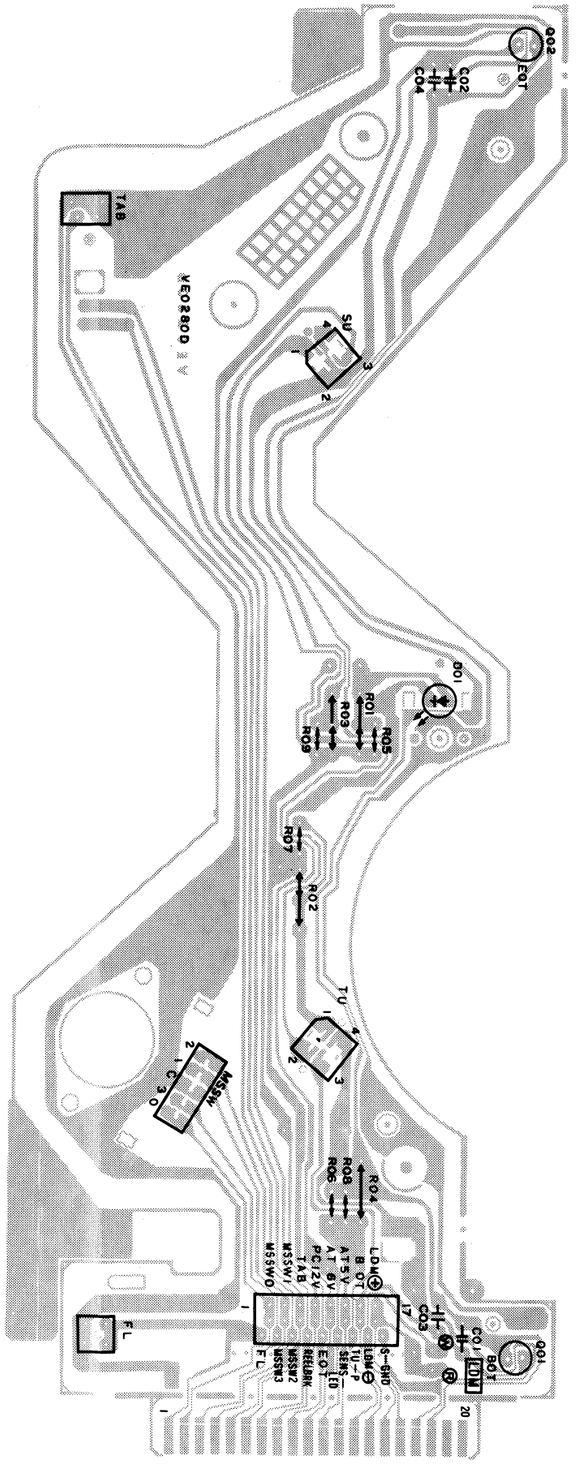
TRANSISTOR

COMPONENT SIDE



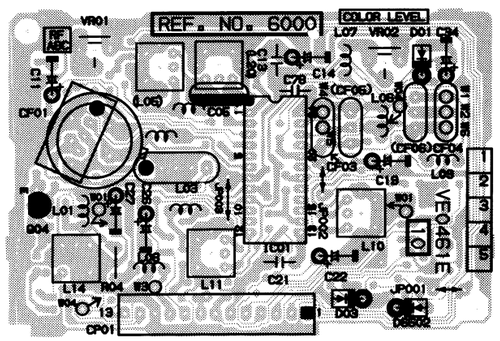
SOLDER SIDE

DECK

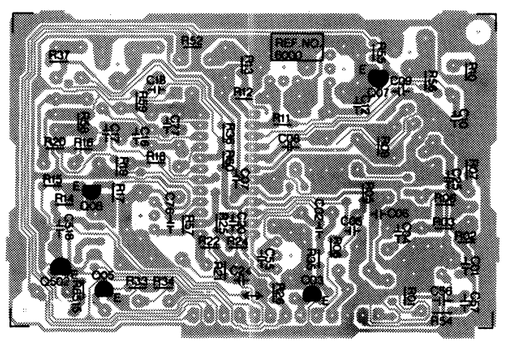


IF

COMPONENT SIDE

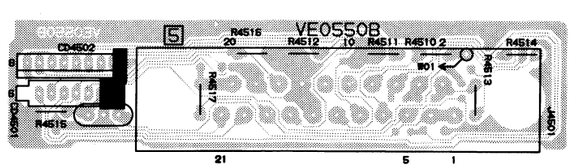


SOLDER SIDE



21PIN

COMPONENT SIDE



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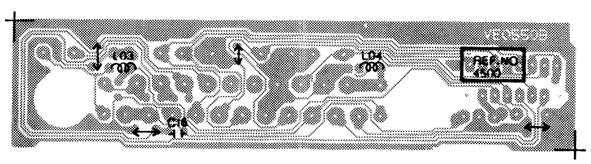
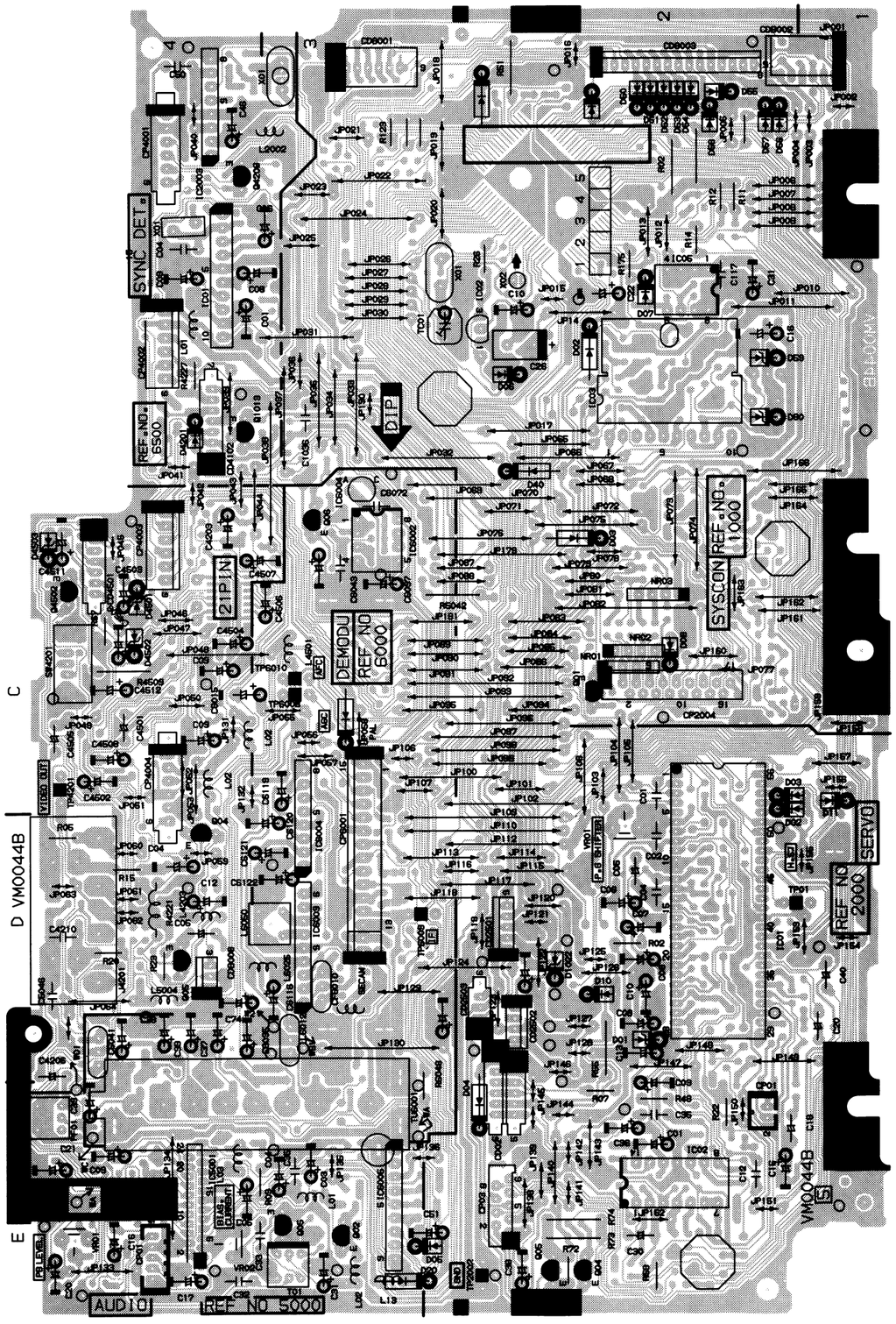


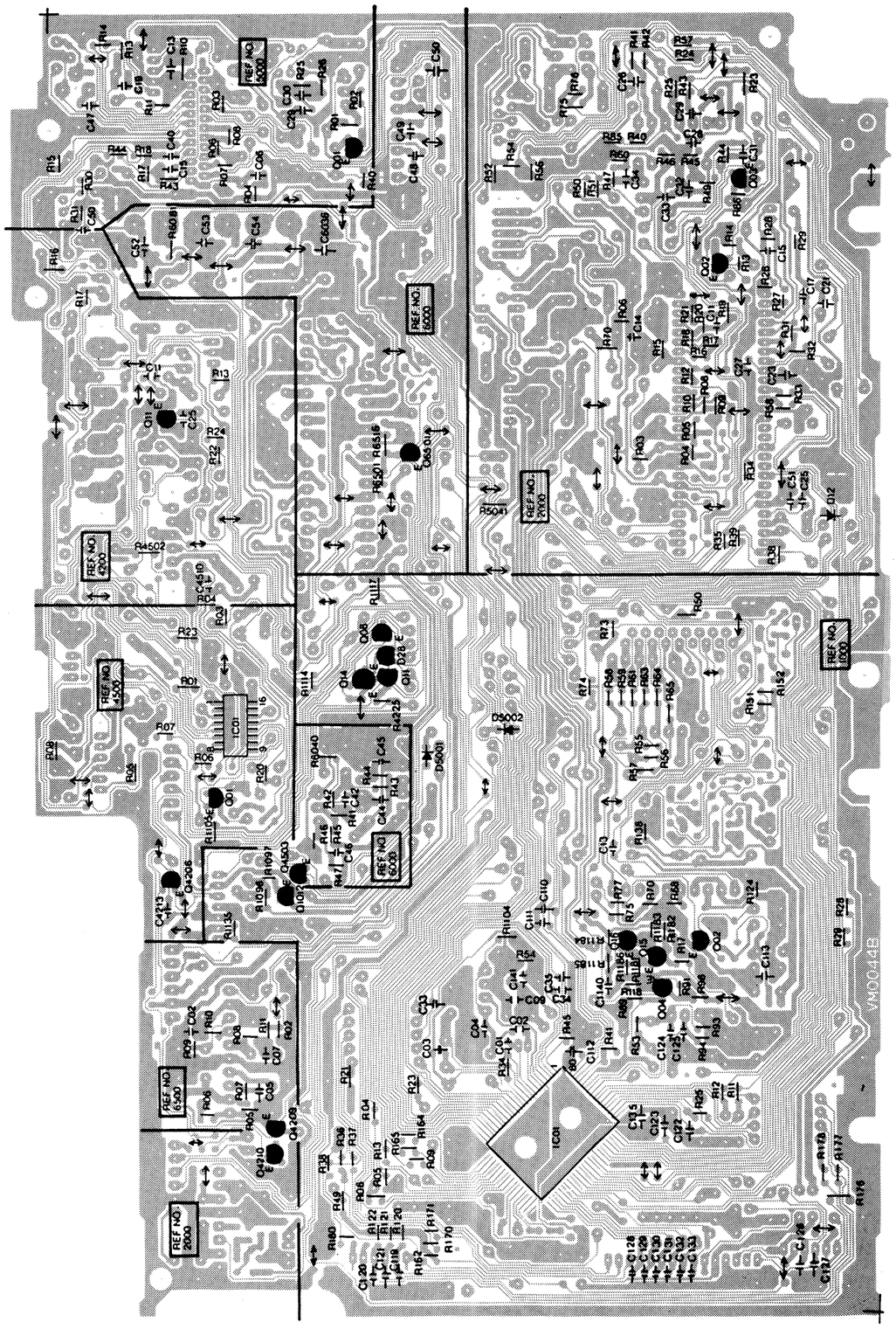
VCR PRINTED CIRCUIT BOARDS

MAIN

COMPONENT SIDE



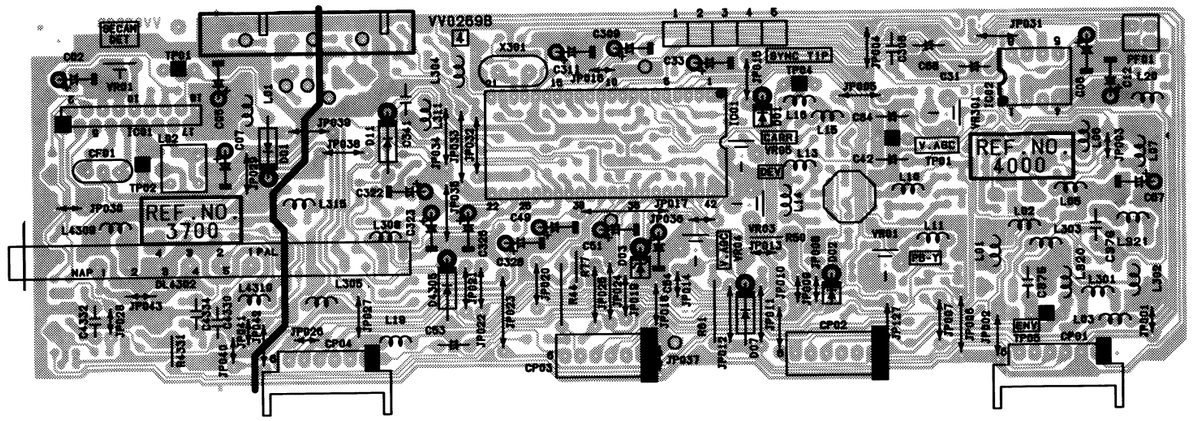
SOLDER SIDE



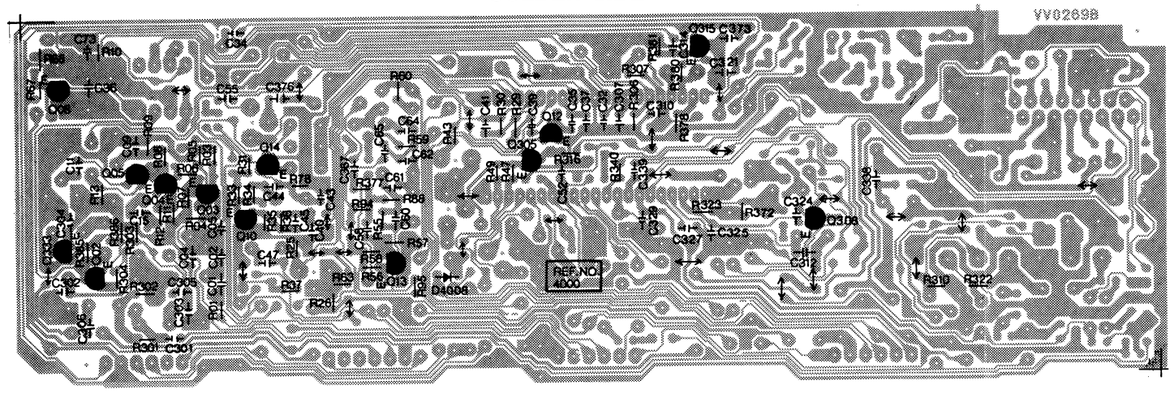
VCR PRINTED CIRCUIT BOARDS

Y.C.

COMPONENT SIDE

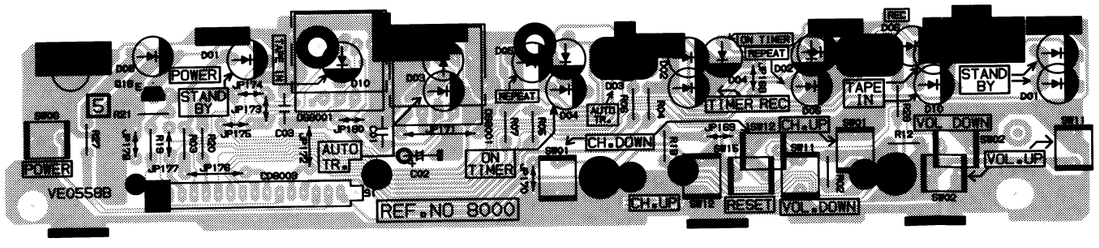


SOLDER SIDE

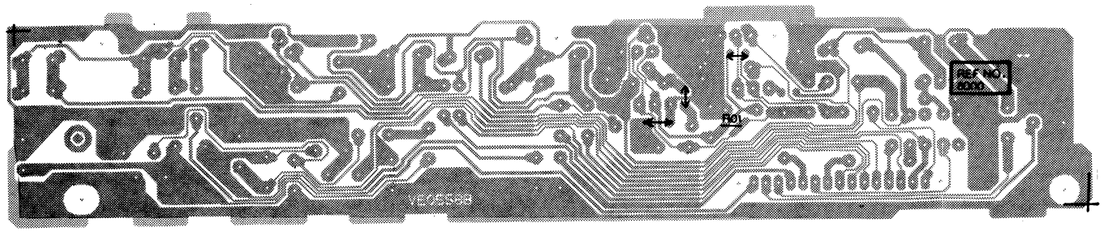


OPERATION 1

COMPONENT SIDE

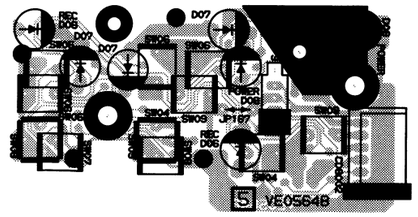


SOLDER SIDE

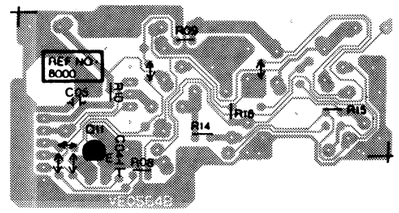


OPERATION 2

COMPONENT SIDE

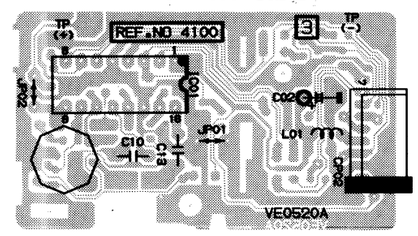


SOLDER SIDE

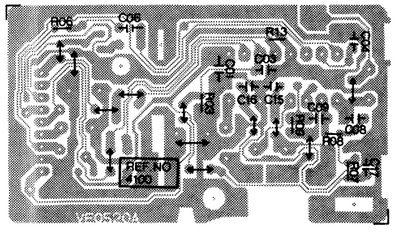


HEAD AMP

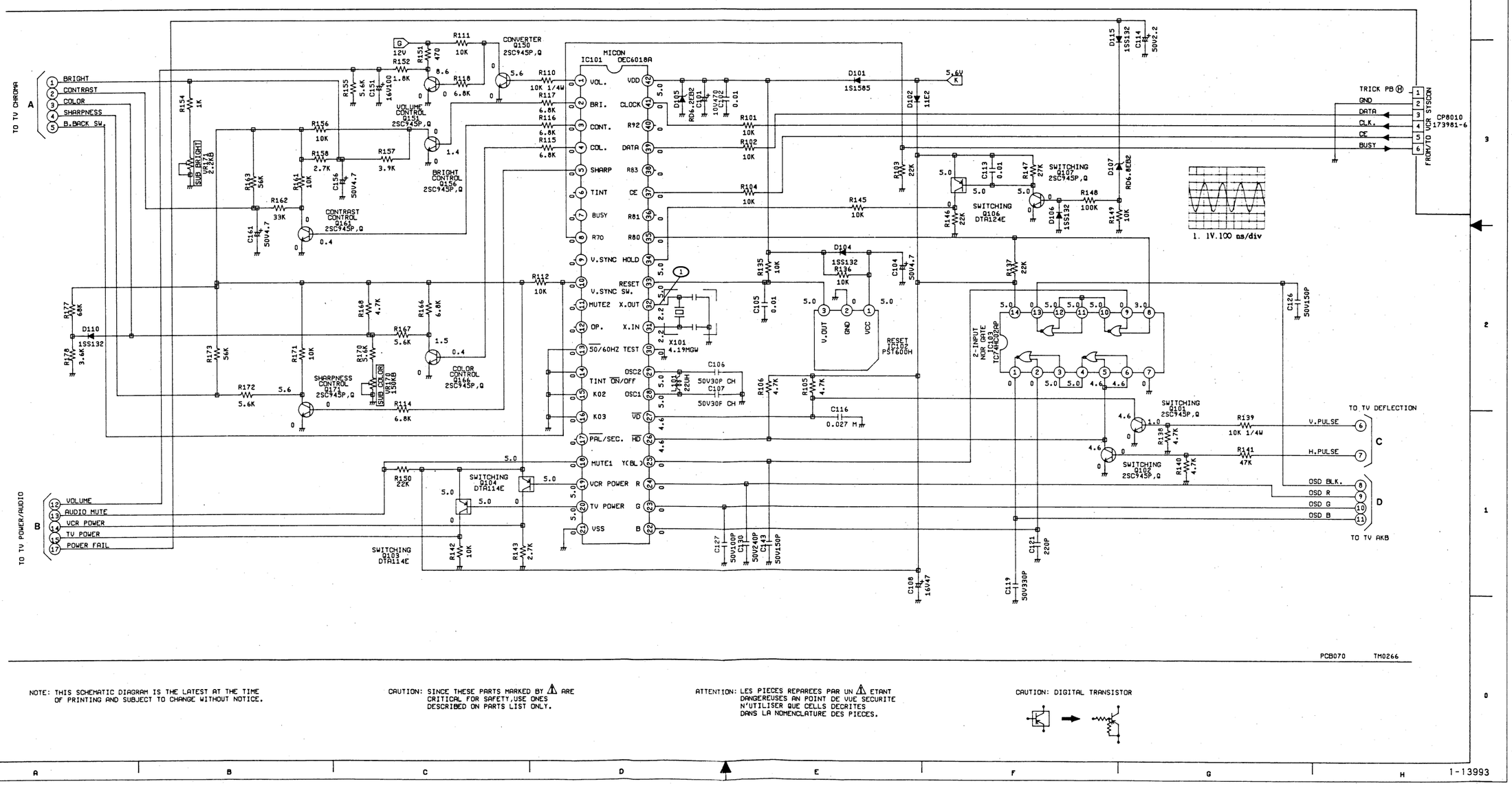
COMPONENT SIDE



SOLDER SIDE



TV MICON SCHEMATIC DIAGRAM



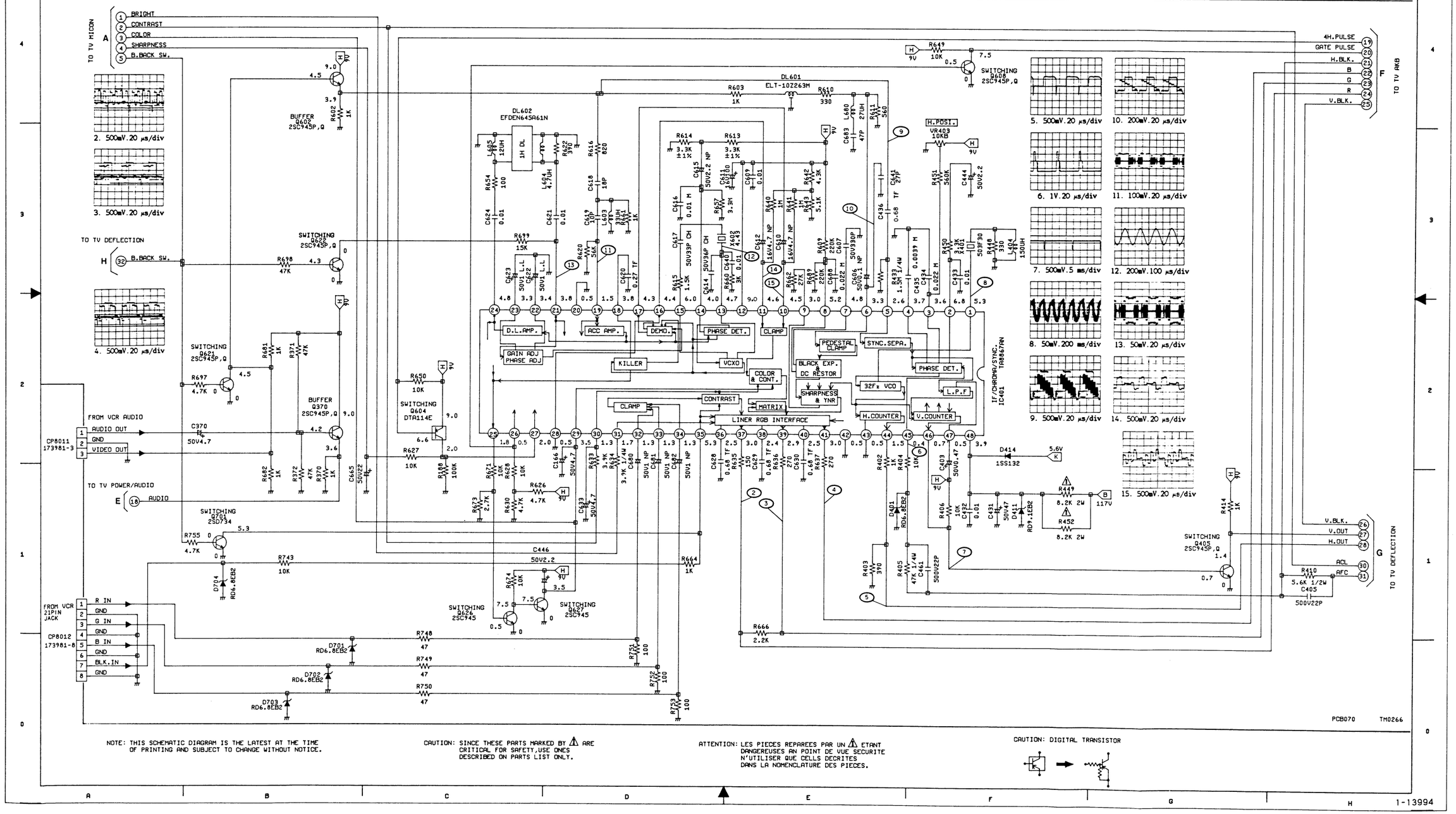
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED ON PARTS LIST ONLY.

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

CAUTION: DIGITAL TRANSISTOR

TV CHROMA SCHEMATIC DIAGRAM



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED ON PARTS LIST ONLY.

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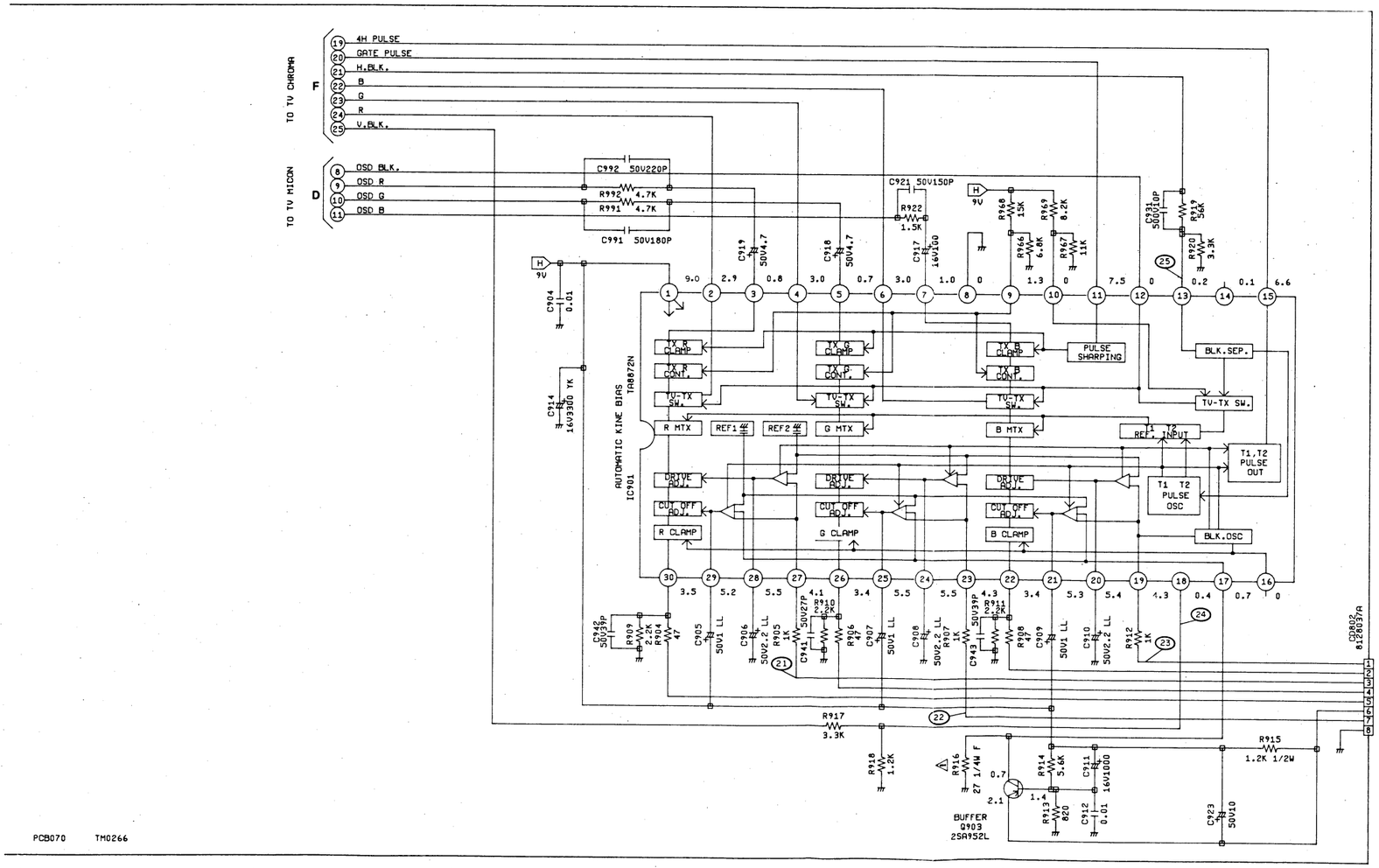
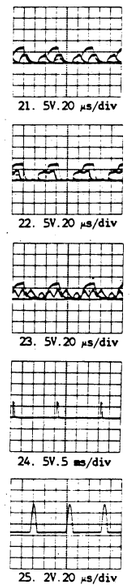
CAUTION: DIGITAL TRANSISTOR

1-13994

TV AKB SCHEMATIC DIAGRAM





NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

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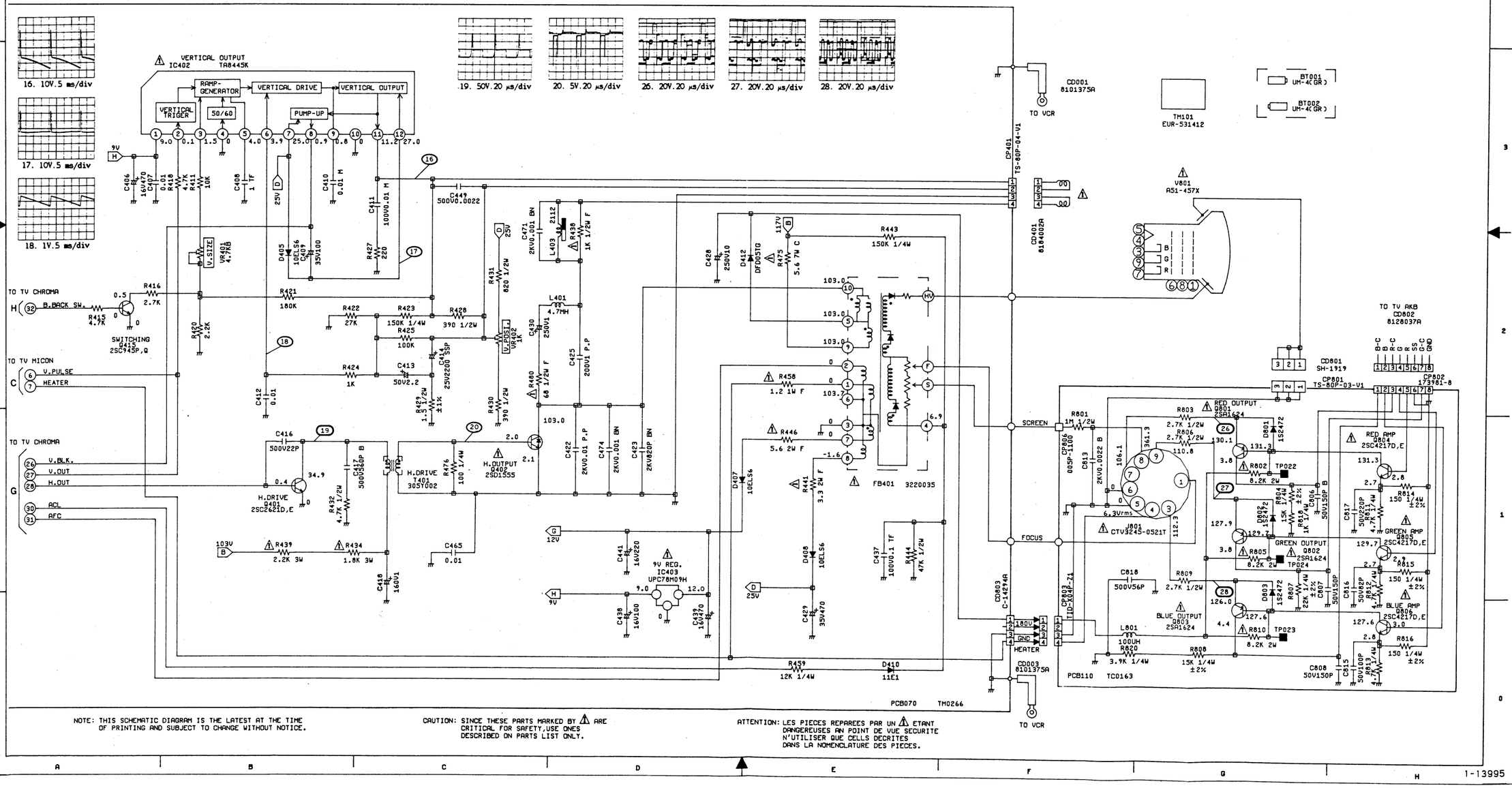
1-13996

TV DEFLECTION SCHEMATIC DIAGRAM



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED ON PARTS LIST ONLY.

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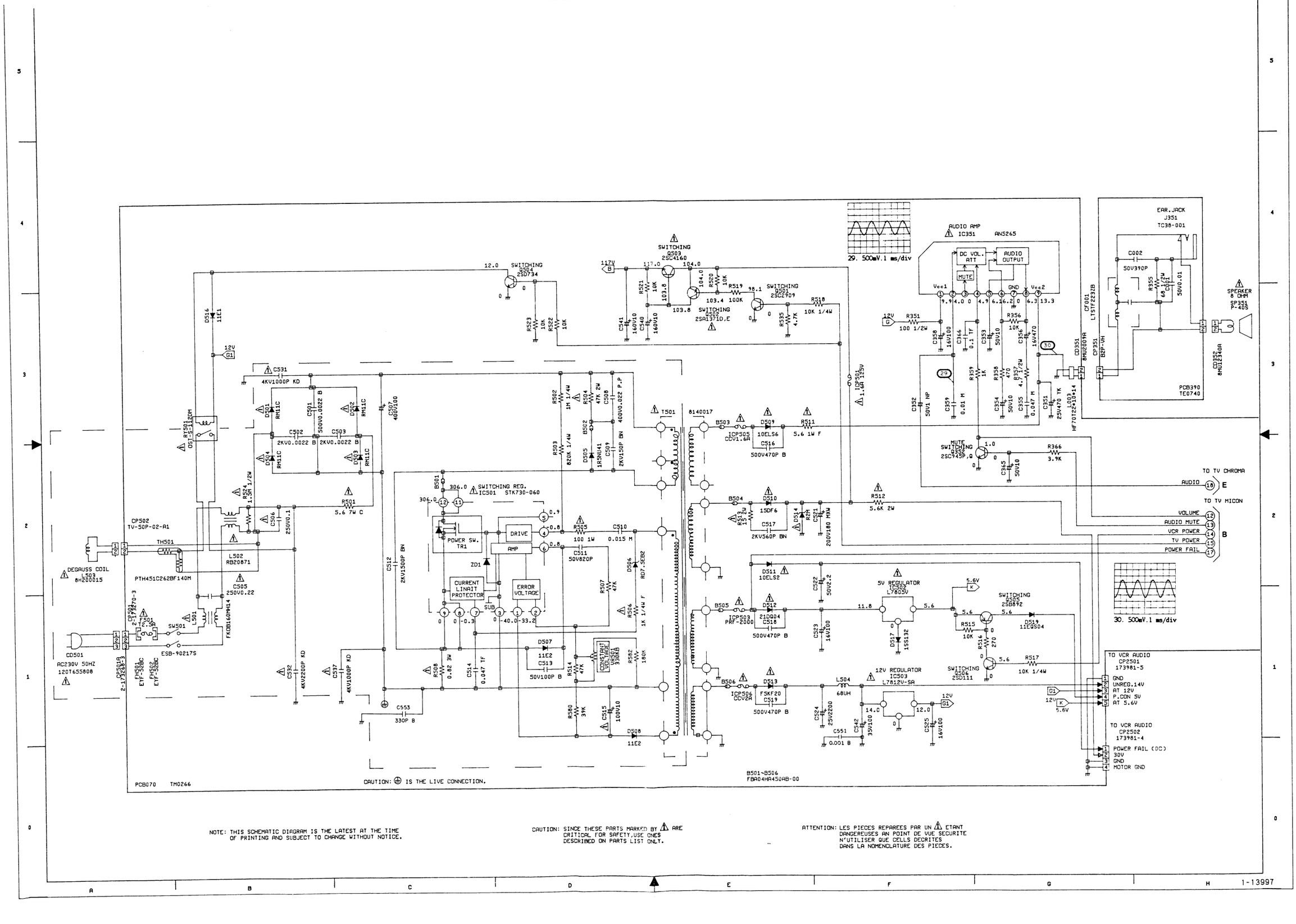
1-13995

TV POWER/AUDIO SCHEMATIC DIAGRAM



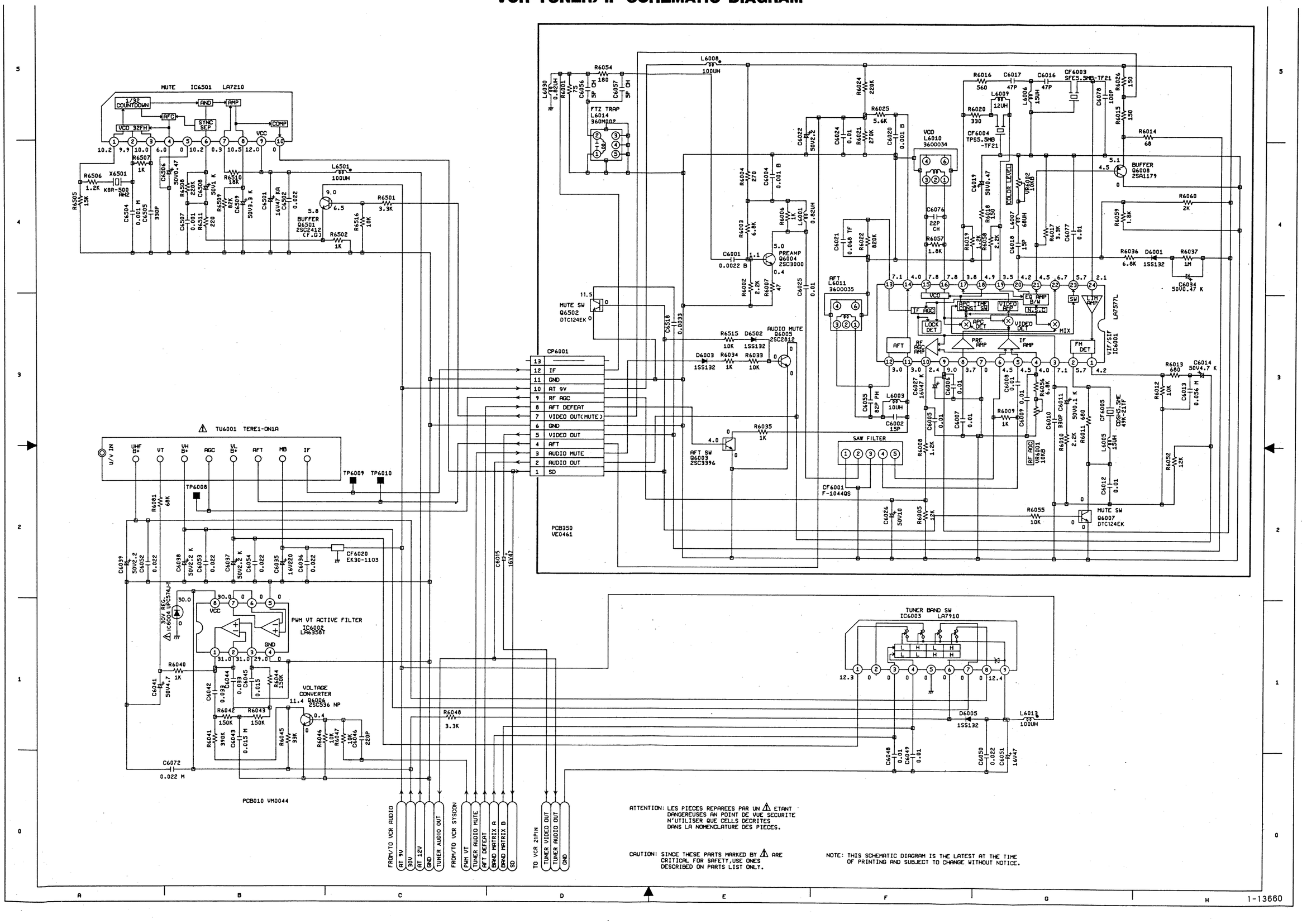
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED ON PARTS LIST ONLY.

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

1-13997

VCR TUNER/IF SCHEMATIC DIAGRAM



ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED ON PARTS LIST ONLY.

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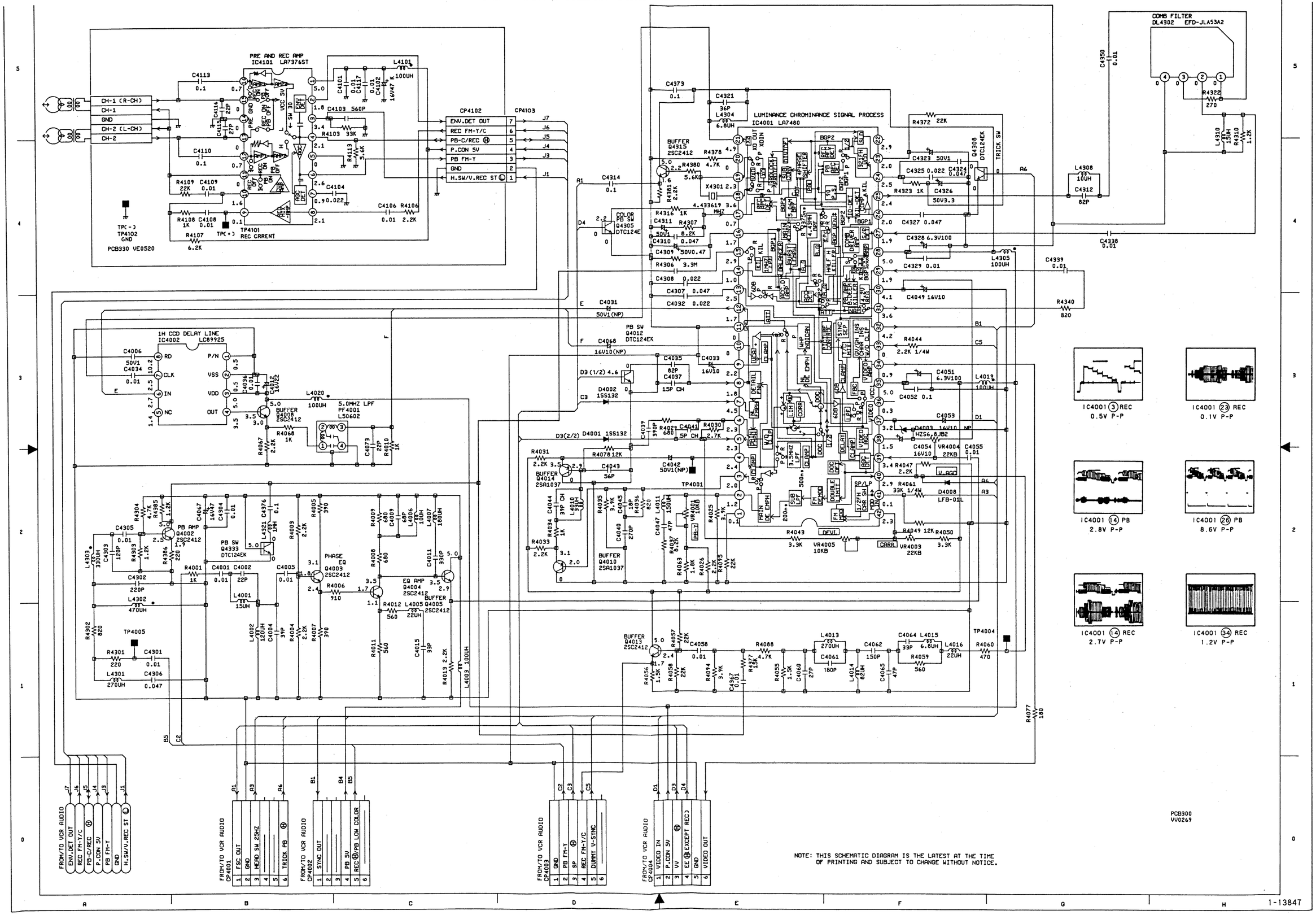
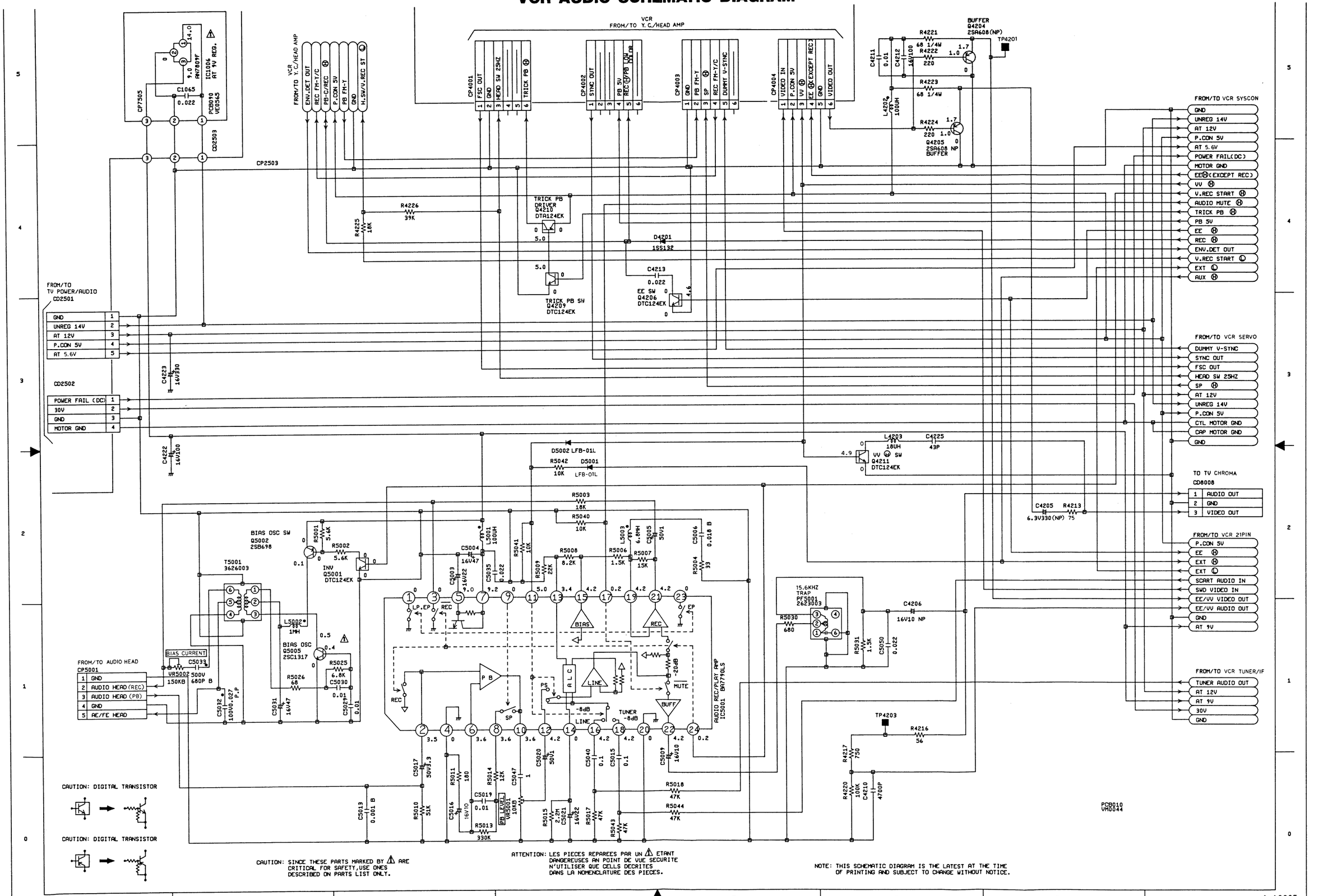
1-13660

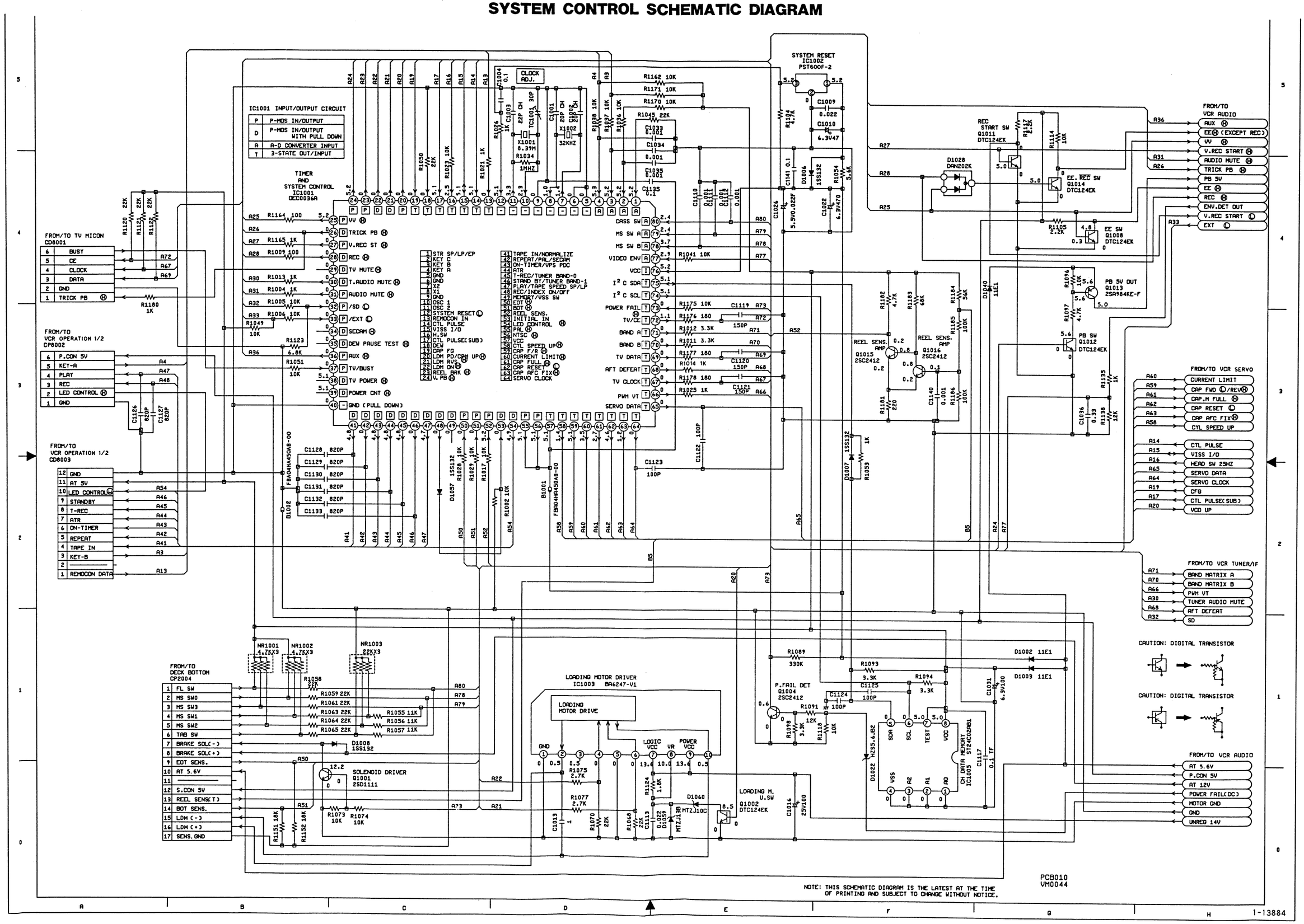
VCR Y.C./HEAD AMP SCHEMATIC DIAGRAM



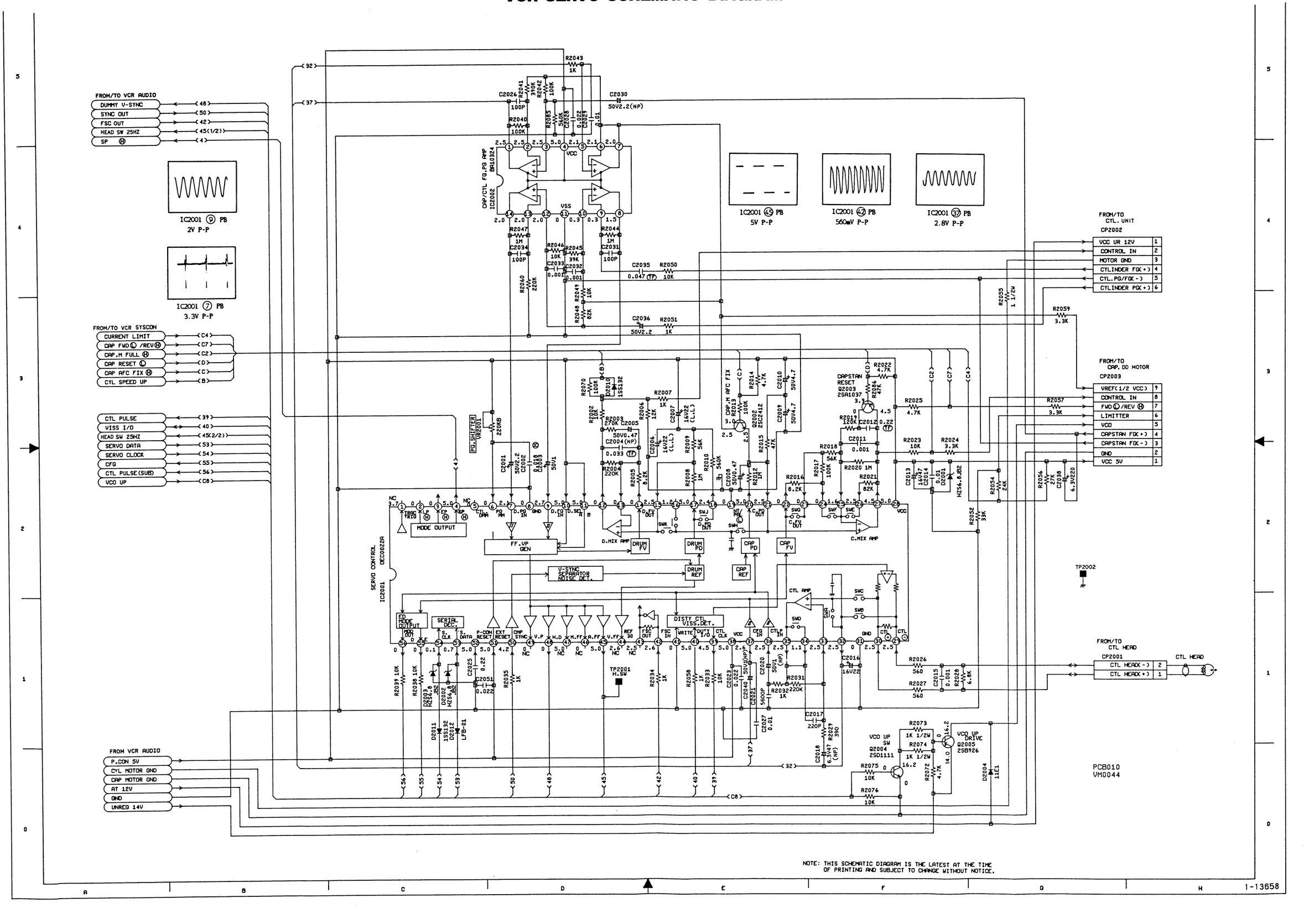
VCR AUDIO SCHEMATIC DIAGRAM



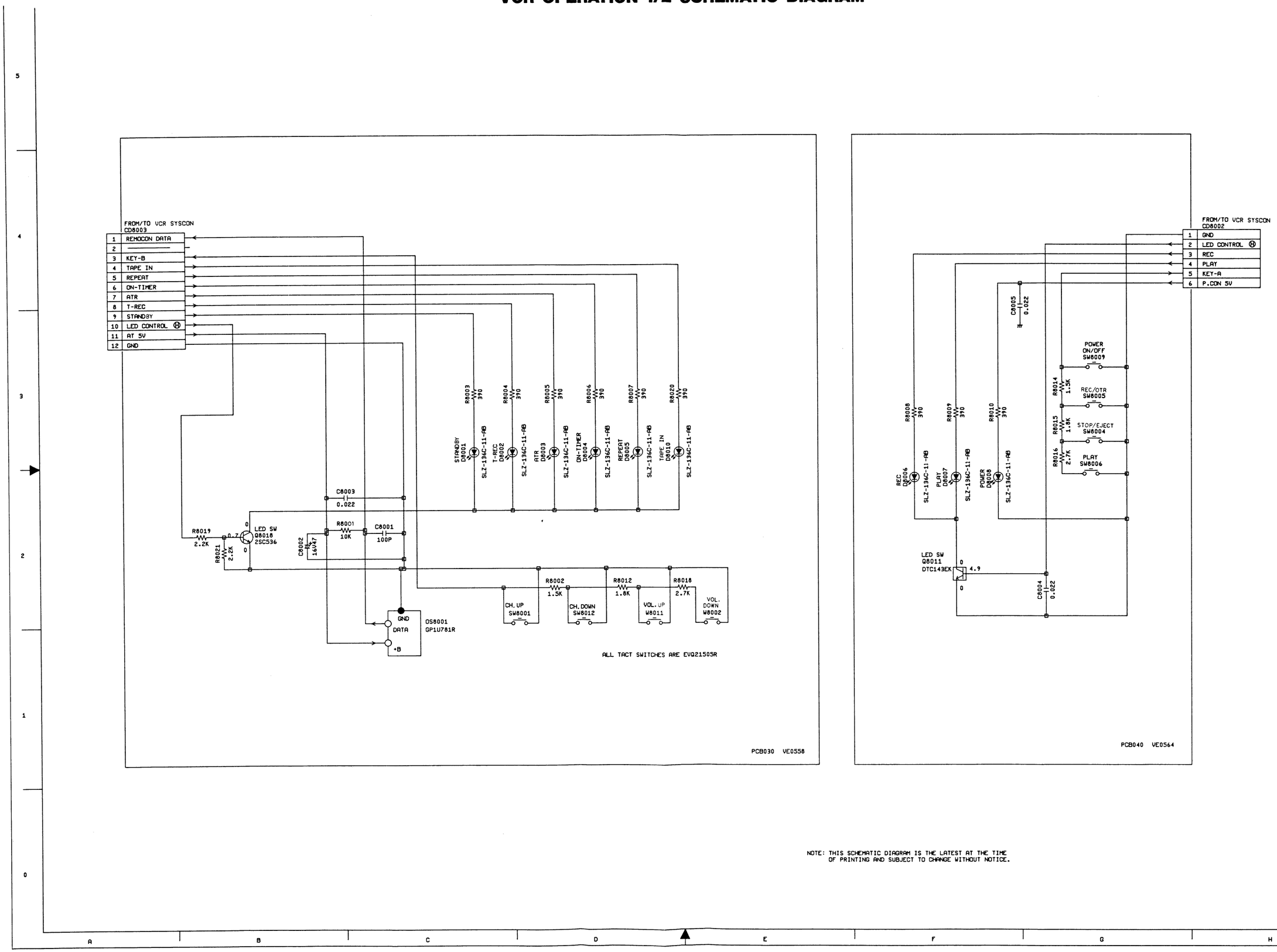
SYSTEM CONTROL SCHEMATIC DIAGRAM



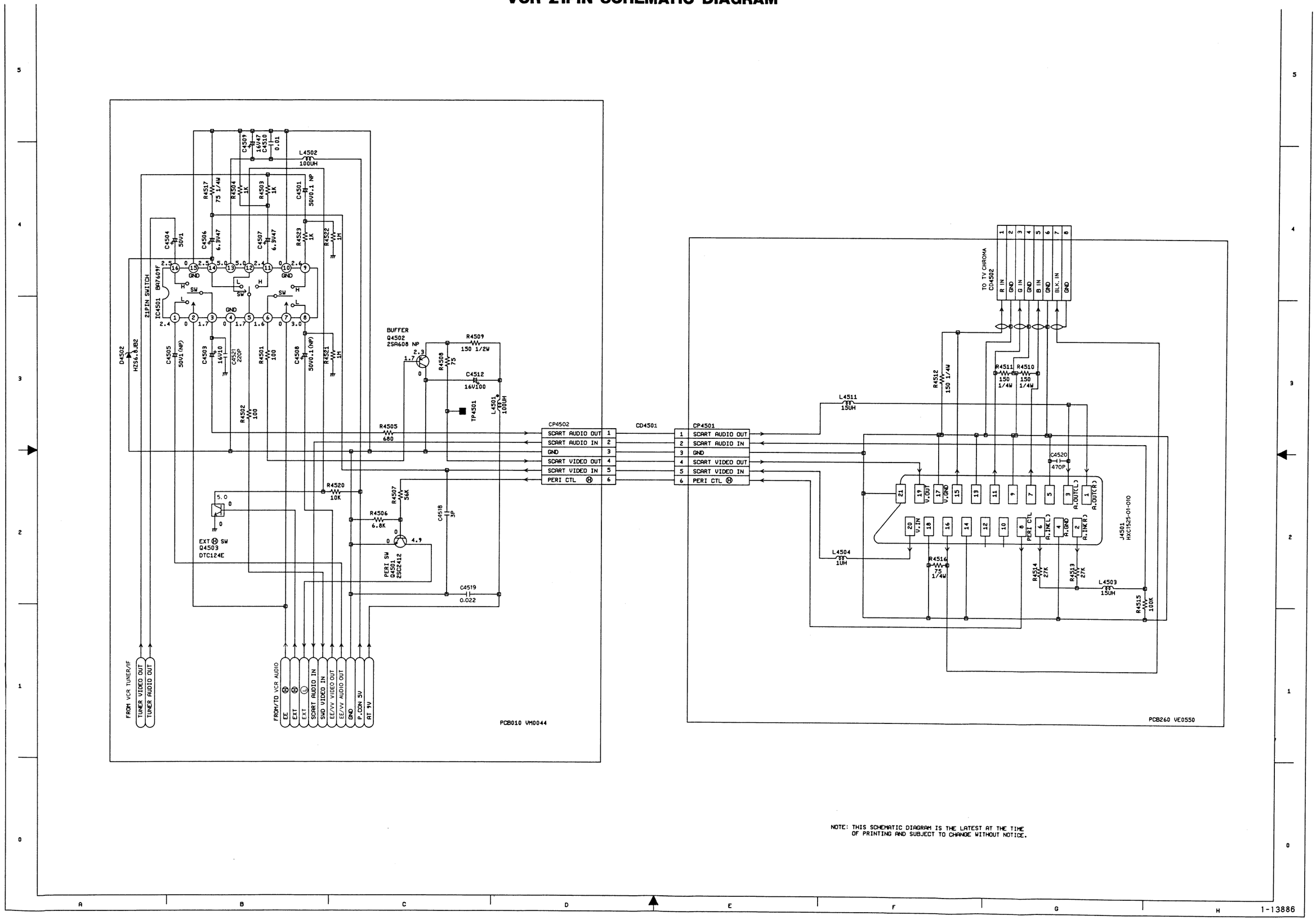
VCR SERVO SCHEMATIC DIAGRAM



VCR OPERATION 1/2 SCHEMATIC DIAGRAM



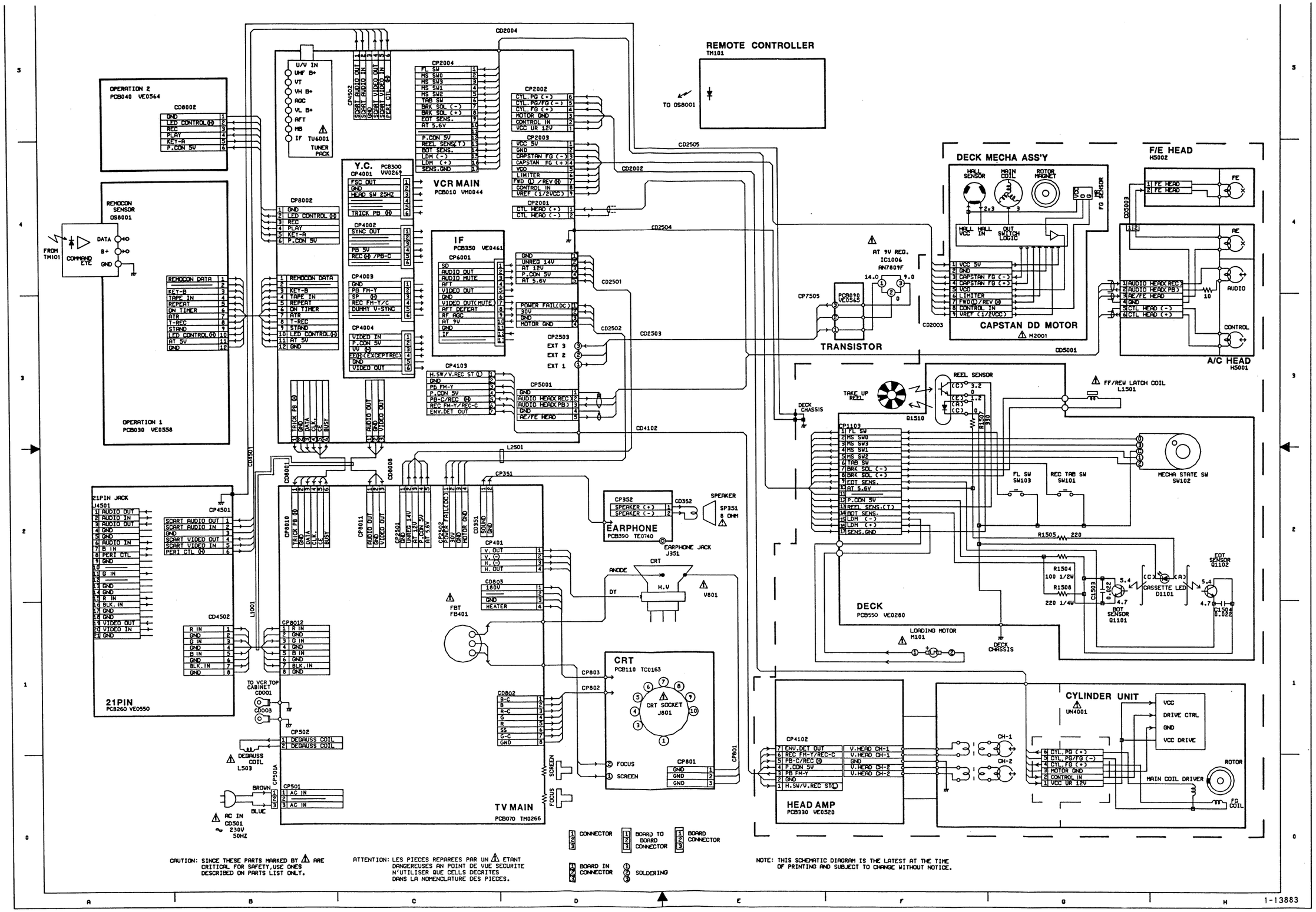
VCR 21PIN SCHEMATIC DIAGRAM



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

1-13886

INTERCONNECTION DIAGRAM



CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED ON PARTS LIST ONLY.

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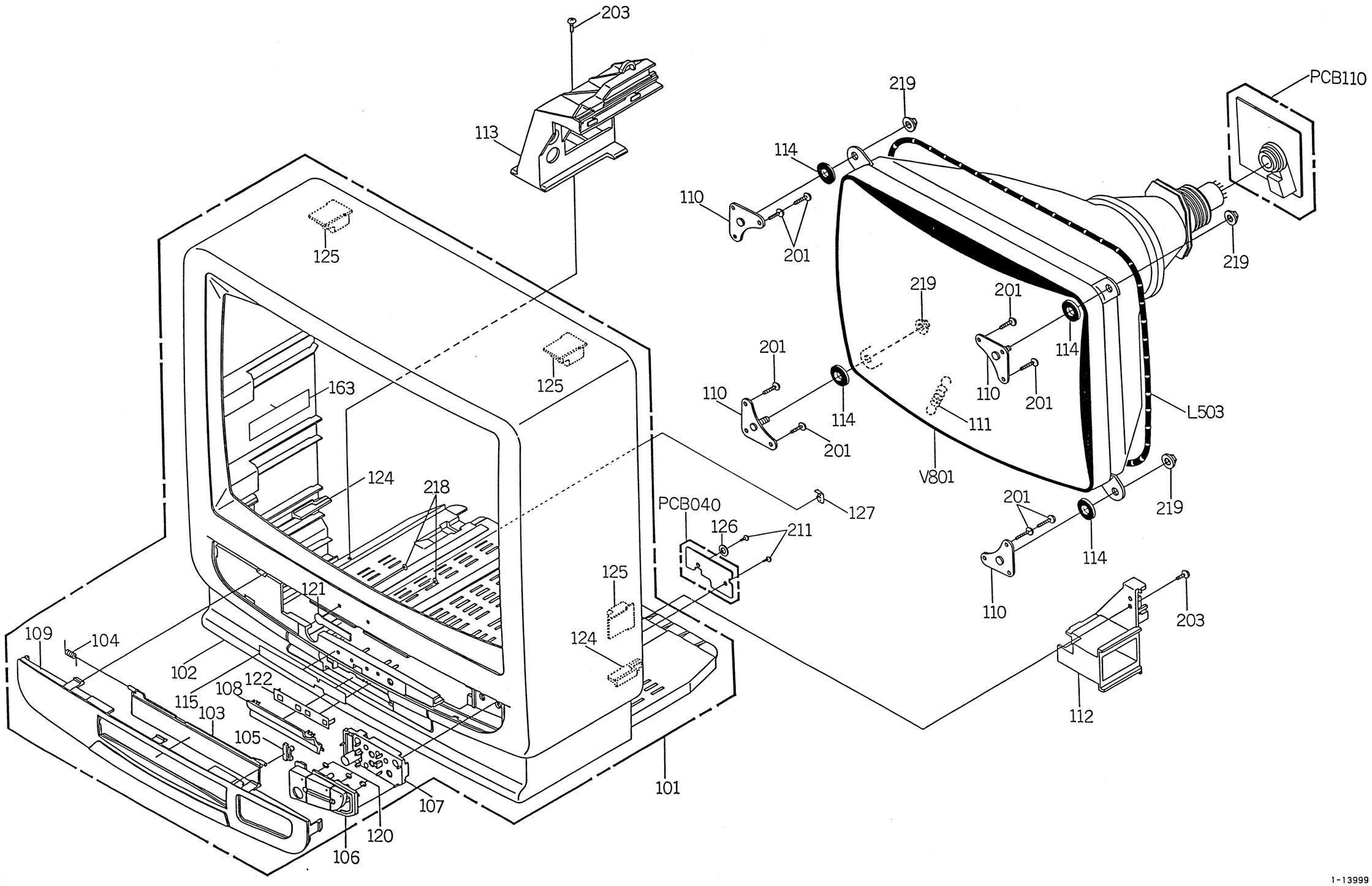
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

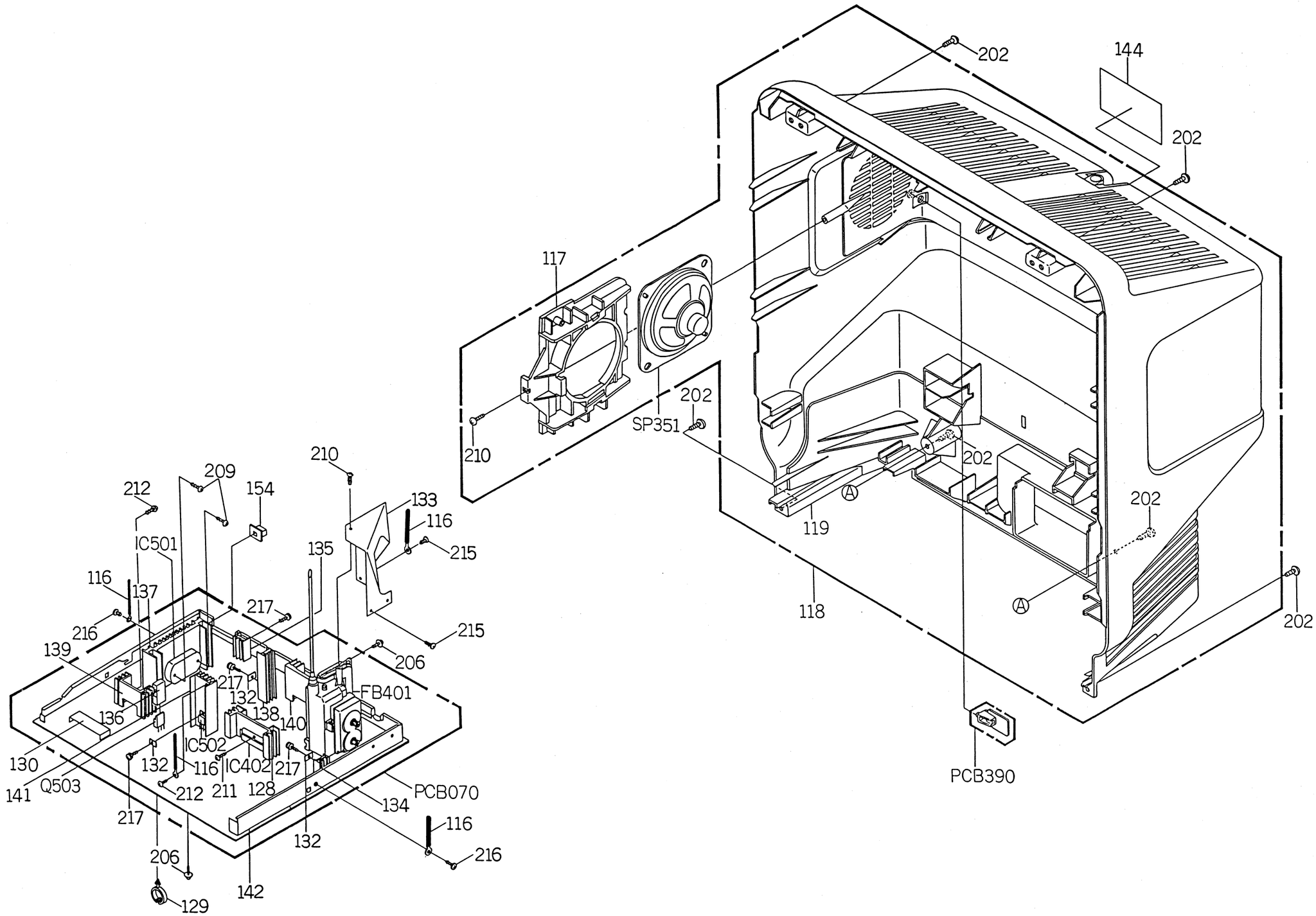
1-13883

MECHANICAL EXPLODED VIEW



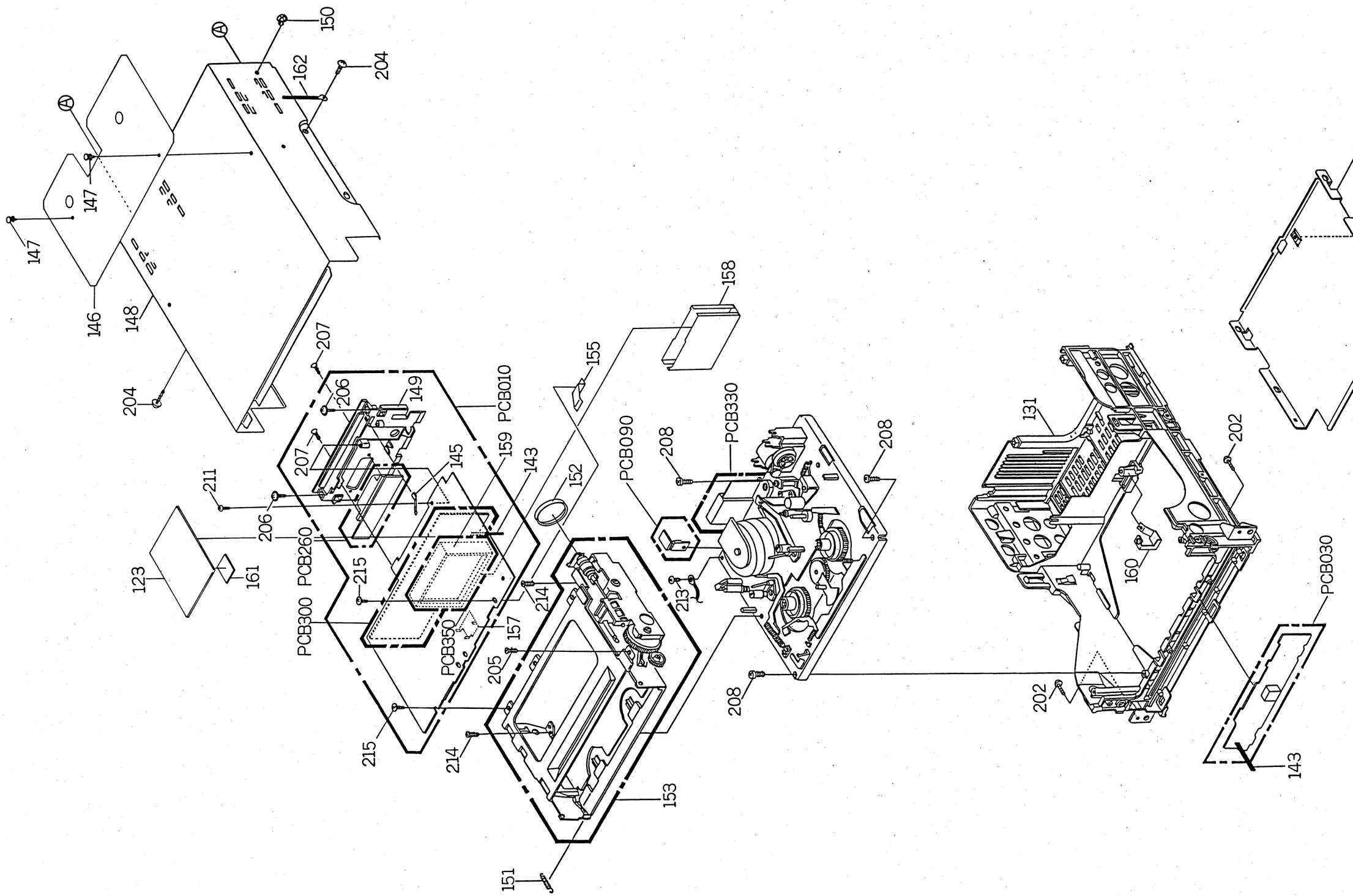
1-13999

MECHANICAL EXPLODED VIEW

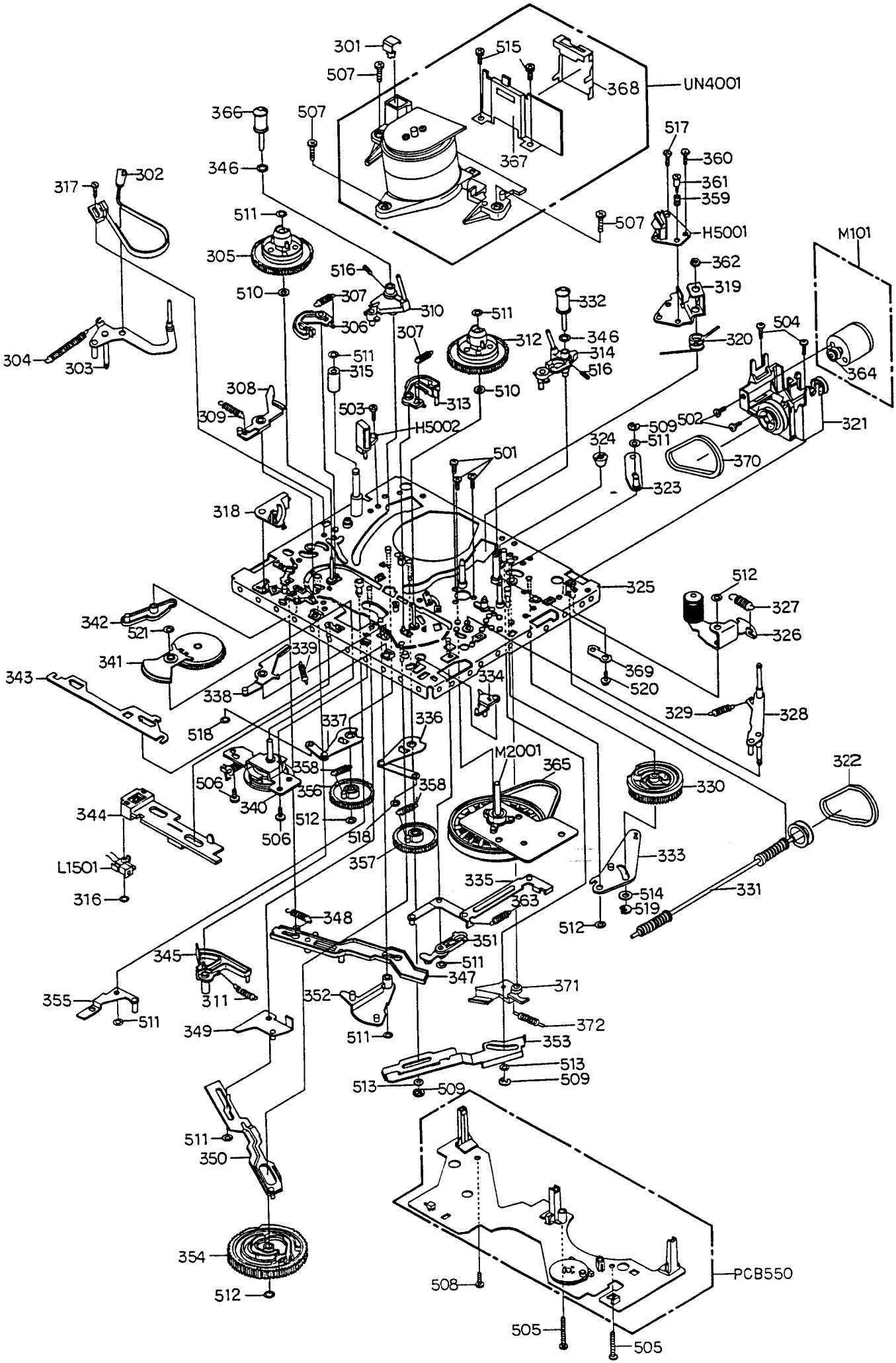


1-14000

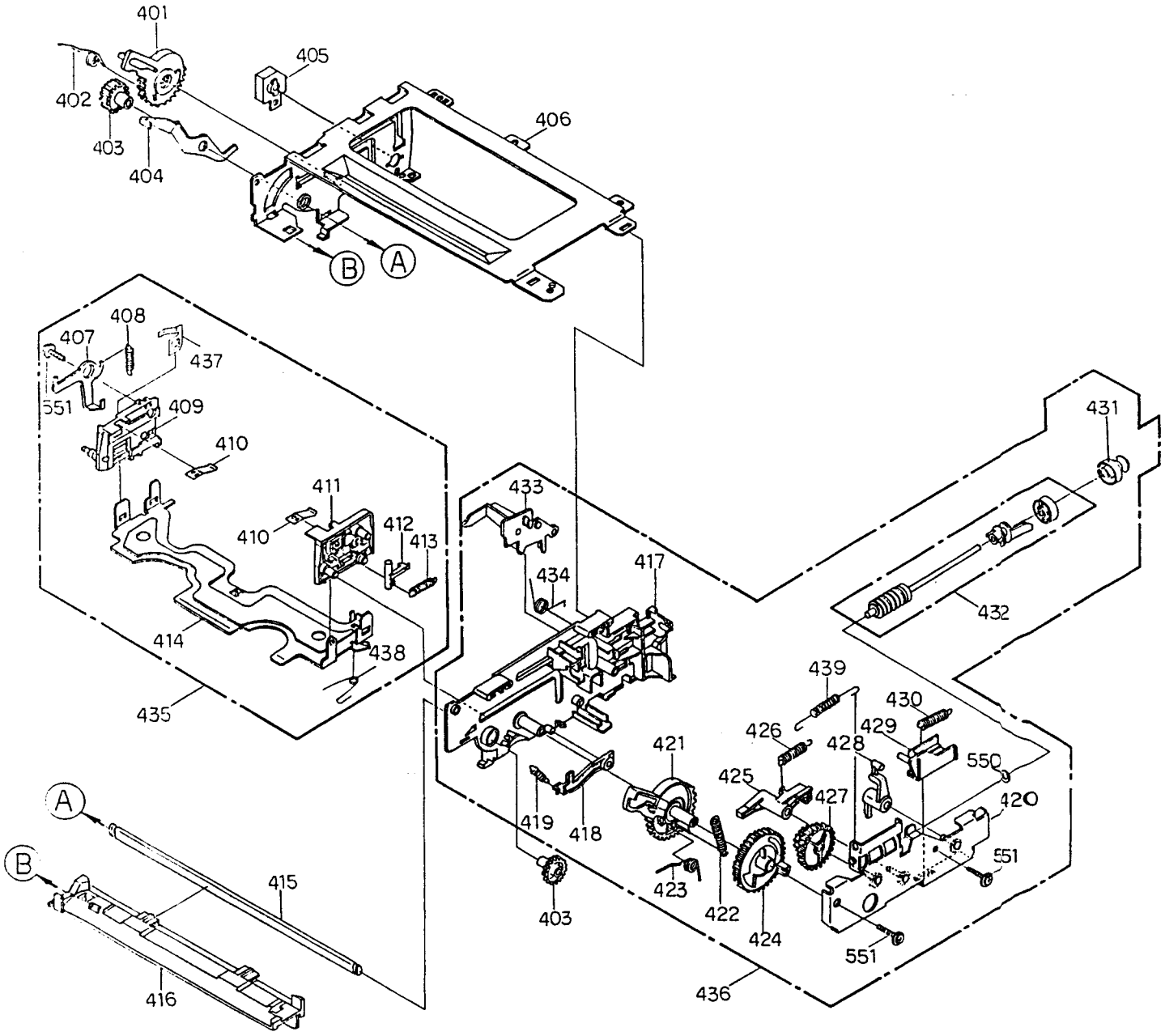
MECHANICAL EXPLODED VIEW



CHASSIS EXPLODED VIEW



FRONT LOADING EXPLODED VIEW



THIS ELECTRICAL PARTS LIST IS STANDARD PART LIST. BUT
INTERCHANGEABLE PARTS MAY BE USED IN THE UNIT.
SEE THE INTERCHANGEABLE PARTS LIST AFTER THE STANDARD PARTS LIST.

ELECTRICAL REPLACEMENT PARTS LIST

REF.NO.	PART NO.	DESCRIPTION
		RESISTORS
R178	R00106362J	RC 3.6K OHM 1/6W
R355	R00202680J	RC 68 OHM 1/2W
R430	R00202391J	RC 390 OHM 1/2W
⚠ R434	R3U28B182J	R.METAL OXIDE 1.8K OHM 3W
⚠ R438	R63582102J	R.FUSE 1K OHM 1/2W
⚠ R439	R3U28B222J	R.METAL OXIDE 2.2K OHM 3W
R441	R6158A3R3J	R.FUSE 3.3 OHM 2W
⚠ R446	R6158A5R6J	R.FUSE 5.6 OHM 2W
⚠ R449	R3U20A822J	R.METAL OXIDE 8.2K OHM 2W
⚠ R452	R3U20A822J	R.METAL OXIDE 8.2K OHM 2W
⚠ R458	R635811R2J	R.FUSE 1.2 OHM 1W
⚠ R475	R5Y2CE5R6J	R.CEMENT 5.6 OHM 7W
⚠ R480	R61582680J	R.FUSE 68 OHM 1/2W
⚠ R501	R5Y2CE5R6J	R.CEMENT 5.6 OHM 7W
⚠ R504	R3U18A473J	R.METAL OXIDE 47K OHM 2W
⚠ R505	R3U181101J	R.METAL OXIDE 100 OHM 1W
⚠ R506	R63584102J	R.FUSE 1K OHM 1/4W
⚠ R508	R3U28BR82J	R.METAL OXIDE 0.82 OHM 3W
⚠ R511	R6158I5R6J	R.FUSE 5.6 OHM 1W
⚠ R512	R3U28A562J	R.METAL OXIDE 5.6K OHM 2W
⚠ R513	R3U18A150J	R.METAL OXIDE 15 OHM 2W
⚠ R524	R011K2155J	RC 1.5M OHM 1/2W
R660	R00106302J	RC 3K OHM 1/6W
R666	R00106222J	RC 2.2K OHM 1/6W
⚠ R802	R3U18A822J	R.METAL OXIDE 8.2K OHM 2W
⚠ R805	R3U18A822J	R.METAL OXIDE 8.2K OHM 2W
⚠ R810	R3U18A822J	R.METAL OXIDE 8.2K OHM 2W
⚠ R916	R615U4270J	R.FUSE 27 OHM 1/4W
R4521	R00106105J	RC 1.0M OHM 1/6W
R4522	R00106105J	RC 1.0M OHM 1/6W
		CAPACITORS
C001	C0JBF0414Z	CC 0.01 UF 50V YF
C002	C0JBSL4N2J	CC 390 PF 50V SL
C119	C0JOSL4L2J	CC 330 PF 50V SL
C121	CHG0B04H2J	CC 220 PF 50V
C127	C0JOSL412K	CC 100 PF 50V SL
C130	C0JOSL412J	CC 240 PF 50V SL
C143	C0JOSL4E2J	CC 150 PF 50V SL
C414	E02SF3222M	CE 2200 UF 25V
C422	P4J2FG103H	CMPP 0.01 UF 2KV
C423	C034BN7W2K	CC 820 PF 2KV
C425	P441F2105J	CMPP 1.0 UF 200V
C428	E0E7FD100M	CE 10 UF 250V
C449	C0J0B05H3K	CC 0.0022UF 500V YB
C471	C034BN713K	CC 0.001 UF 2KV
C474	C01BBN713K	CC 0.001 UF 2KV B
C502	C0JBB07H3K	CC 0.0022UF 2KV YB
C503	C0JBB07H3K	CC 0.0022UF 2KV YB
⚠ C505	P2420A224M	CMP 0.22 UFAC125V/250V
⚠ C506	P2420A104M	CMP 0.1 UFAC125V/250V
C507	E52C0H101M	CE 100 UF 400V
C508	P3N1F4223J	CPP 0.022 UF 400V
C509	C050BN7E2K	CC 150 PF 2KV BN
C512	C034BN7E3K	CC 0.0015UF 2KV
⚠ C515	E0E7T8100M	CE 10 UF 100V
C517	C034BN7S2K	CC 560 PF 2KV
C521	E52E0C181M	CE 180 UF 200V
C522	E0E7052R2M	CE 2.2 UF 50V
C524	E0ELF3222M	CE 2200 UF 25V
⚠ C531	CA3030913M	CC 1000 PF 4KV E
⚠ C532	CA30309H3M	CC 2200 PF 4KV E
⚠ C537	CA3030913M	CC 1000 PF 4KV E
C542	E0E704101M	CE 100 UF 35V
C551	CF40B0413K	CC 0.001 UF 50V
C553	CF40B04L2K	CC 330 PF 50V
C616	P1S300103J	CP 0.01 UF 50V
C630	P6M300684J	CMPL 0.68 UF 50V
C640	CHG0Y0214M	CC 0.01 UF 16V
C914	E0ELF2332M	CE 3300 UF 16V
C921	C0JOSL4E2K	CC 150 PF 50V SL
C923	E0E705100M	CE 10 UF 50V
C931	C0JOSL511D	CC 10 PF 500V SL
C941	C0JOSL4K1J	CC 27 PF 50V SL
C942	C0JOSL4N1J	CC 39 PF 50V SL
C943	C0JOSL4N1J	CC 39 PF 50V SL
C4518	C0JOSL430C	CC 3 PF 50V SL
C4519	CHG0F03H4Z	CC 0.022 UF 25V
C4520	CHG0B04Q2K	CC 470 PF 50V
C4521	CHG0B04H2K	CC 220 PF 50V

REF.NO.	PART NO.	DESCRIPTION
		CAPACITORS (CONT.)
C8002	E0R102470M	CE 47 UF 16V
		SEMICONDUCTORS
D101	D15T015850	DIODE.SILICON 1S1585(TPE3)
D102	D28T011E20	DIODE.SILICON 11E2TA1
D104	D1VT001320	DIODE.SILICON 1SS132T-77
D105	D92T06R2B2	DIODE.ZENER RD6.2EB 2 TA11R
D106	D1VT001320	DIODE.SILICON 1SS132T-77
D107	D92T06R8B2	DIODE.ZENER RD6.8EB 2 TA11R
D110	D1V0001320	DIODE.SILICON 1SS132
D115	D1VT001320	DIODE.SILICON 1SS132T-77
D401	D92T06R8B2	DIODE.ZENER RD6.8EB 2 TA11R
D405	D28T10ELS6	DIODE.RECTIFIER 10ELS6TA1
D407	D28T10ELS6	DIODE.RECTIFIER 10ELS6TA1
D408	D28T10ELS6	DIODE.RECTIFIER 10ELS6TA1
D410	D280011E10	DIODE.SILICON 11E1
D411	D92T09R1B2	DIODE.ZENER RD9.1EB 2 TA11R
D412	D23TFD05TG	DIODE.RECTIFIER DFD05TG-BT
D414	D1V0001320	DIODE.SILICON 1SS132
⚠ D501	D2BTRM11C0	DIODE.RECTIFIER RM11C
⚠ D502	D2BTRM11C0	DIODE.RECTIFIER RM11C
⚠ D503	D2BTRM11C0	DIODE.RECTIFIER RM11C
⚠ D504	D2BTRM11C0	DIODE.RECTIFIER RM11C
D505	D25T1R5NU0	DIODE.SILICON 1R5NU41
D506	D92T07R5B2	DIODE.ZENER RD7.5EB 2 TA11R
D507	D28T011E20	DIODE.SILICON 11E2TA1
D508	D28T011E20	DIODE.SILICON 11E2TA1
⚠ D509	D28T10ELS6	DIODE.RECTIFIER 10ELS6TA1
⚠ D510	D28015DF60	DIODE.SILICON 15DF6
⚠ D511	D28T10ELS2	DIODE.RECTIFIER 10ELS2TA1
⚠ D512	D2811DQ040	DIODE.SILICONE 21DQ04FE5R
⚠ D513	D280F5KF20	DIODE.FAST RECOVERY F5KF20
⚠ D514	D2BT00R2M0	DIODE.AVALANCHE R2M V1
D516	D28T011E10	DIODE.SILICON 11E1TA1
D517	D1VT001320	DIODE.SILICON 1SS132T-77
D519	D28TEQS040	DIODE.SCHOTTKY 11EQS04TA1
D701	D92T06R8B2	DIODE.ZENER RD6.8EB 2 TA11R
D702	D92006R8B2	DIODE.ZENER RD6.8EB 2
D703	D92006R8B2	DIODE.ZENER RD6.8EB 2
D704	D92006R8B2	DIODE.ZENER RD6.8EB 2
D801	D1VT024720	DIODE.SILICON 1S24721-77
D802	D1VT024720	DIODE.SILICON 1S24721-77
D803	D1VT024720	DIODE.SILICON 1S24721-77
D1002	D28T011E10	DIODE.SILICON 11E1TA1
D1003	D28T011E10	DIODE.SILICON 11E1TA1
D1006	D1VT001320	DIODE.SILICON 1SS132T-77
D1007	D1VT001320	DIODE.SILICON 1SS132T-77
D1008	D1VT001320	DIODE.SILICON 1SS132T-77
D1022	D94TA5R6J2	DIODE.ZENER HZS5R6JB2-TE
D1028	DD7RN202K0	DIODE.SILICON DAN202KT 147
D1040	D28T011E10	DIODE.SILICON 11E1TA1
D1057	D1VT001320	DIODE.SILICON 1SS132T-77
D1059	D97U01301B	DIODE.ZENER MTZJ13B T-77
D1060	D97U01001C	DIODE.ZENER MTZJ10C T-77
D2001	D94TA6R8J2	DIODE.ZENER HZS6R8JB2-TE
D2002	D94TA6R8J2	DIODE.ZENER HZS6R8JB2-TE
D2003	D94TA6R8J2	DIODE.ZENER HZS6R8JB2-TE
D2004	D28T011E10	DIODE.SILICON 11E1TA1
D2010	D1VT001320	DIODE.SILICON 1SS132T-77
D2011	D1VT001320	DIODE.SILICON 1SS132T-77
D2012	DD3RLFB01L	DIODE.SILICON LFB-01L
D4001	D1VT001320	DIODE.SILICON 1SS132T-77
D4002	D1VT001320	DIODE.SILICON 1SS132T-77
D4003	D94TA6R8J2	DIODE.ZENER HZS6R8JB2-TE
D4008	DD3RLFB01L	DIODE.SILICON LFB-01L
D4201	D1VT001320	DIODE.SILICON 1SS132T-77
D4502	D94TA6R8J2	DIODE.ZENER HZS6R8JB2-TE
D5001	DD3RLFB01L	DIODE.SILICON LFB-01L
D5002	DD3RLFB01L	DIODE.SILICON LFB-01L
D6001	D1VT001320	DIODE.SILICON 1SS132T-77
D6003	D1VT001320	DIODE.SILICON 1SS132T-77
D6005	D1VT001320	DIODE.SILICON 1SS132T-77
D6502	D1VT001320	DIODE.SILICON 1SS132T-77
D8001	002132Q020	LED SLZ-136C-11-AB-T1
D8002	002132Q020	LED SLZ-136C-11-AB-T1
D8003	002132Q020	LED SLZ-136C-11-AB-T1
D8004	002132Q020	LED SLZ-136C-11-AB-T1
D8005	002132Q020	LED SLZ-136C-11-AB-T1
D8006	002132Q020	LED SLZ-136C-11-AB-T1
D8007	002132Q020	LED SLZ-136C-11-AB-T1
D8008	002132Q020	LED SLZ-136C-11-AB-T1
D8010	002132Q020	LED SLZ-136C-11-AB-T1
IC101	155D06018A	IC OEC601A

REF.NO.	PART NO.	DESCRIPTION
		SEMICONDUCTORS (CONT.)
IC102	19UJ0T600H	IC PST600H
IC103	155D0HC02A	IC TC74HC02AP
⚠ IC351	101SP52650	IC AN5265
IC401	105DE8867A	IC TA8867AN
⚠ IC402	105SD84450	IC TA8445K
⚠ IC403	10X398M090	IC UPC78M09H
⚠ IC501	123S900600	IC STK730-060
⚠ IC502	103A97805V	IC L7805V
⚠ IC503	103B97812V	IC L7812V-SA
IC901	105DE68720	IC TA8872N
IC1001	154F50036A	IC OEC0036A
IC1002	19UJ0T600F	IC PST600F-2
IC1003	107S0247V1	IC BA6247-V1
IC1005	153D0C02A0	IC ST24C02AB1
⚠ IC1006	101K978090	IC AN7809F
IC2001	154D40022A	IC OEC0022A
IC2002	107D003240	IC BA10324
IC4001	103D374800	IC LA7480
IC4002	103D389925	IC LC89925
IC4101	103DG7376S	IC LA7376ST
IC4501	107F076090	IC BA7609F
IC5001	107T77790L	IC BA7790LS
IC6001	103DA7577L	IC LA7577L
IC6002	103D06358T	IC LA6358T
IC6003	103S079100	IC LA7910
⚠ IC6004	10M190574J	IC UPC574J-T
IC6501	103S072100	IC LA7210
Q101	TCLT009450	TRANSISTOR,SILICON 2SC945A(C)-T
Q102	TCLT009450	TRANSISTOR,SILICON 2SC945A(C)-T
Q103	TPYTB03001	COMPOUND TRANSISTOR DTA114ESTP
Q104	TPYTB03001	COMPOUND TRANSISTOR DTA114ESTP
Q106	TPYTC03001	COMPOUND TRANSISTOR DTA124ESTP
Q107	TCLT009450	TRANSISTOR,SILICON 2SC945A(C)-T
Q150	TCLT009450	TRANSISTOR,SILICON 2SC945A(C)-T
Q151	TCLT009450	TRANSISTOR,SILICON 2SC945A(C)-T
Q156	TCLT009450	TRANSISTOR,SILICON 2SC945A(C)-T
Q161	TCLT009450	TRANSISTOR,SILICON 2SC945A(C)-T
Q166	TCLT009450	TRANSISTOR,SILICON 2SC945A(C)-T
Q171	TCLT009450	TRANSISTOR,SILICON 2SC945A(C)-T
Q352	TCLT009450	TRANSISTOR,SILICON 2SC945A(C)-T
Q370	TCLT009450	TRANSISTOR,SILICON 2SC945A(C)-T
Q401	TC3Q026210	TR.,SILICON 2SC2621(D,E)-RAC
⚠ Q402	TDUF015550	TRANSISTOR,SILICON 2SD1555
Q405	TCLT009450	TRANSISTOR,SILICON 2SC945A(C)-T
Q415	TCLT009450	TRANSISTOR,SILICON 2SC945A(C)-T
Q501	TC3T029090	TRANSISTOR,SILICON 2SC2909(S,T)-AA
⚠ Q502	TA3T1371A0	TRANSISTOR,SILICON 2SA1371(D,E)-AE
⚠ Q503	TC30041600	TRANSISTOR,SILICON 2SC4160
Q504	TD3T007340	TR.,SILICON 2SD734(E,F,G)-AA
Q505	TB3T008920	TRANSISTOR,SILICON 2SB892(S,T)-AE
Q506	TDWT011110	TRANSISTOR,SILICON 2SD1111-AA
Q602	TCLT009450	TRANSISTOR,SILICON 2SC945A(C)-T
Q604	TPYTB03001	COMPOUND TRANSISTOR DTA114ESTP
Q608	TCLT009450	TRANSISTOR,SILICON 2SC945A(C)-T
Q621	TCLT009450	TRANSISTOR,SILICON 2SC945A(C)-T
Q622	TCLT009450	TRANSISTOR,SILICON 2SC945A(C)-T
Q626	TCLT009450	TRANSISTOR,SILICON 2SC945A(C)-T
Q627	TCLT009450	TRANSISTOR,SILICON 2SC945A(C)-T
Q701	TD3T007340	TR.,SILICON 2SD734(E,F,G)-AA
⚠ Q801	TA3T016240	TRANSISTOR,SILICON 2SA1624-AA
⚠ Q802	TA3T016240	TRANSISTOR,SILICON 2SA1624-AA
⚠ Q803	TA3T016240	TRANSISTOR,SILICON 2SA1624-AA
⚠ Q804	TC3F042170	TR.,SILICON 2SC4217(D,E)-RAC
⚠ Q805	TC3F042170	TR.,SILICON 2SC4217(D,E)-RAC
⚠ Q806	TC3F042170	TR.,SILICON 2SC4217(D,E)-RAC
Q903	TALT00952L	TRANSISTOR,SILICON 2SA952(C)-T L
Q1001	TDWT011110	TRANSISTOR,SILICON 2SD1111-AA
Q1002	TNYTC05001	COMPOUND TRANSISTOR DTC124EKT147
Q1004	T8YA2412K0	TRANSISTOR,SILICON 2SC2412KT147
Q1008	TNYTC05001	COMPOUND TRANSISTOR DTC124EKT147
Q1011	TNYTC05001	COMPOUND TRANSISTOR DTC124EKT147
Q1012	TNYTC05001	COMPOUND TRANSISTOR DTC124EKT147
Q1013	TAWT0984K0	TRANSISTOR,SILICON 2SA984K(E,F)-AA
Q1014	TNYTC05001	COMPOUND TRANSISTOR DTC124EKT147
Q1015	T8YA2412K0	TRANSISTOR,SILICON 2SC2412KT147
Q1016	T8YA2412K0	TRANSISTOR,SILICON 2SC2412KT147
Q2002	T8YA2412K0	TRANSISTOR,SILICON 2SC2412KT147
Q2003	T6YA1037K0	TRANSISTOR,SILICON 2SA1037KT147
Q2004	TDWT011110	TRANSISTOR,SILICON 2SD1111-AA
Q2005	TBWT00926T	TRANSISTOR,SILICON 2SB926T-AA
Q4002	T8YA2412K0	TRANSISTOR,SILICON 2SC2412KT147
Q4003	T8YA2412K0	TRANSISTOR,SILICON 2SC2412KT147
Q4004	T8YA2412K0	TRANSISTOR,SILICON 2SC2412KT147
Q4005	T8YA2412K0	TRANSISTOR,SILICON 2SC2412KT147

REF.NO.	PART NO.	DESCRIPTION
		SEMICONDUCTORS (CONT.)
Q4008	T8YA2412K0	TRANSISTOR,SILICON 2SC2412KT147
Q4010	T6YA1037K0	TRANSISTOR,SILICON 2SA1037KT147
Q4012	TNYTC05001	COMPOUND TRANSISTOR DTC124EKT147
Q4013	T8YA2412K0	TRANSISTOR,SILICON 2SC2412KT147
Q4014	T6YA1037K0	TRANSISTOR,SILICON 2SA1037KT147
Q4204	TA3T0608K0	TRANSISTOR,SILICON 2SA608K(F,G)-NP
Q4205	TA3T0608K0	TRANSISTOR,SILICON 2SA608K(F,G)-NP
Q4206	TNYTC05001	COMPOUND TRANSISTOR DTC124EKT147
Q4209	TNYTC05001	COMPOUND TRANSISTOR DTC124EKT147
Q4210	TPYTC05001	COMPOUND TRANSISTOR DTA124EKT147
Q4211	TNYTC05001	COMPOUND TRANSISTOR DTC124EKT147
Q4305	TNYTC05001	COMPOUND TRANSISTOR DTC124EKT147
Q4308	TNYTC05001	COMPOUND TRANSISTOR DTC124EKT147
Q4315	T8YA2412K0	TRANSISTOR,SILICON 2SC2412KT147
Q4333	TNYTC05001	COMPOUND TRANSISTOR DTC124EKT147
Q4501	T8YA2412K0	TRANSISTOR,SILICON 2SC2412KT147
Q4502	TA3T0608K0	TRANSISTOR,SILICON 2SA608K(F,G)-N
Q4503	TNYTC05001	COMPOUND TRANSISTOR DTC124EKT147
Q5001	TNYTC05001	COMPOUND TRANSISTOR DTC124EKT147
Q5002	TBWT006980	TRANSISTOR,SILICON 2SB698(E,F)-AA
⚠ Q5005	TCKT013170	TR.,SILICON 2SC1317(Q,R,S)-T
Q6003	TN3TC05001	COMPOUND,TRANSISTOR 2SC3396(CY)-TA
Q6004	TC3T030000	TRANSISTOR,SILICON 2SC3000-AA
Q6005	T83A028120	TRANSISTOR,SILICON 2SC2812-(L6,L7)
Q6006	TC3T0536K0	TRANSISTOR,SILICON 2SC536K(F,G)-NP
Q6007	TNYTC05001	COMPOUND TRANSISTOR DTC124EKT147
Q6008	T63A011790	TRANSISTOR,SILICON 2SA1179-TA
Q6501	T8YA2412K0	TRANSISTOR,SILICON 2SC2412KT147
Q6502	TNYTC05001	COMPOUND TRANSISTOR DTC124EKT147
Q8011	TNYTA05001	COMPOUND TRANSISTOR DTC143EKT147
Q8018	TC3T0536S0	TRANSISTOR,SILICON 2SC536(F,G)-SPA
		COILS & TRANSFORMERS
L003	02A6B2E0A1	CORE,FERRITE HF70T22*10*14
L101	021LA6220K	COIL 22 UH
L401	021679472K	COIL 4.7 MH
L403	022G000012	COIL,LINEARITY 21000012
L404	021LA6151K	COIL 150 UH
⚠ L501	029A000002	COIL,LINE FILTER AC FKOB160MH14
⚠ L502	0291000001	COIL,LINE FILTER RB-20871
⚠ L503	028H200015	COIL,DEGAUSS 8H200015
L504	02116D680K	COIL 68 UH
L603	021LA6330K	COIL 33 UH
L604	021LA64R7K	COIL 4.7 UH
L605	021LA6120K	COIL 12 UH
L680	021LA6270K	COIL 27 UH
L801	021673101K	COIL 100 UH
L1001	02A6B9A970	CORE,FERRITE HF70T29*7.5*19
⚠ L2501	02A6B2E0A1	CORE,FERRITE HF70T22*10*14
L4001	021LA6150K	COIL 15 UH
L4002	021LA6121K	COIL 120 UH
L4003	021B73101K	COIL 100 UH
L4005	021LA6220K	COIL 22 UH
L4006	021LA6100K	COIL 10 UH
L4007	021LA6181K	COIL 180 UH
L4010	021LA6330K	COIL 33 UH
L4011	021LA6151K	COIL 150 UH
L4013	021LA6271K	COIL 270 UH
L4014	021LA6820K	COIL 82 UH
L4015	021LA66R8K	COIL 6.8 UH
L4016	021LA6220K	COIL 22 UH
L4019	021B73101K	COIL 100 UH
L4020	021B73101K	COIL 100 UH
L4101	021B7B101K	COIL 100 UH
L4202	021B73101K	COIL 100 UH
L4203	021LA6180K	COIL 18 UH
L4301	021LA6271K	COIL 270 UH
L4302	021J79471J	COIL 470 UH
L4303	021J79331J	COIL 330 UH
L4304	021B736R8K	COIL 6.8 UH
L4305	021B73101K	COIL 100 UH
L4308	021LA6100K	COIL 10 UH
L4310	021LA6150J	COIL 15 UH
L4321	021B73102K	COIL 1000 UH
L4501	021B73101K	COIL 100 UH
L4502	021B73101K	COIL 100 UH
L4503	0216S1150K	COIL 15.0 UH
L4504	0216S11R0M	COIL 1.0 UH
L4511	021L96150K	COIL 15 UH
L5001	021B73101K	COIL 100 UH
L5002	021B73102K	COIL 1000 UH
L5003	021J74682J	COIL 6.8 MH
L6001	021LA6R82M	COIL 0.82 UH

REF.NO.	PART NO.	DESCRIPTION	
	COILS & TRANSFORMERS (CONT.)		
L6003	021LA6100K	COIL	10 UH
L6005	021LA6150K	COIL	15 UH
L6006	021LA6150K	COIL	15 UH
L6007	021LA6680K	COIL	68 UH
L6008	021B73101K	COIL	100 UH
L6009	021LA6120K	COIL	12 UH
L6010	033600034N	COIL.VIDEO IFT	3600034
L6011	033600035N	COIL.VIDEO IFT	3600035
L6013	021B73101K	COIL	100 UH
L6014	03360M002I	COIL.VIDEO IFT	360M002
L6030	021L96R82M	COIL	0.82 UH
L6501	021B73101K	COIL	100 UH
T401	03305Y002G	TRANS.,HORIZONTAL DRIVE	305Y002
⚠ T501	048140017W	TRANSFORMER,SWITCHING	8140017
T5001	033626003G	COIL.BIAS OSC	3626003
	JACKS		
J351	060C121008	JACK.RCA 3.5	TC38-001
⚠ J801	066C130012	SOCKET.CRT	CVT3245-0521T
J4501	0632100029	SOCKET.21PIN	HXC1525-01-010
	SWITCHES		
SW501	0530105005	SWITCH.PUSH	ESB-90217S
SW8001	0504101T34	SWITCH.TACT	EVQ21505R
SW8002	0504101T34	SWITCH.TACT	EVQ21505R
SW8004	0504101T34	SWITCH.TACT	EVQ21505R
SW8005	0504101T34	SWITCH.TACT	EVQ21505R
SW8006	0504101T34	SWITCH.TACT	EVQ21505R
SW8009	0504101T34	SWITCH.TACT	EVQ21505R
SW8011	0504101T34	SWITCH.TACT	EVQ21505R
SW8012	0504101T34	SWITCH.TACT	EVQ21505R
	VARIABLE RESISTORS		
VR170	V1263E5BTC	VR.SEMIFIXED	RH063MCE5R07A
VR171	V1263H3BTC	VR.SEMIFIXED	RH063MCJ3R07A
VR401	V1263Q3BT7	VR.SEMIFIXED	RH0683CS3R04A
VR402	V145D13B03	VR.SEMIFIXED	TM8KPV2-1SB13
VR403	V126314BTC	VR.SEMIFIXED	RH063MC14R07A
VR501	V1263L5BTC	VR.SEMIFIXED	RH063MCN5R07A
VR2001	V1263H5BTC	VR.SEMIFIXED	RH063MCJ5R07A
VR4001	V126314BTC	VR.SEMIFIXED	RH063MC14R07A
VR4003	V1263H4BTC	VR.SEMIFIXED	RH063MCJ4R07A
VR4004	V1263H4BTC	VR.SEMIFIXED	RH063MCJ4R07A
VR4005	V126314BTC	VR.SEMIFIXED	RH063MC14R07A
VR5001	V126314BTC	VR.SEMIFIXED	RH063MC14R07A
VR5002	V1263E5BT7	VR.SEMIFIXED	RH0683CE5R04A
VR6001	V126314BTC	VR.SEMIFIXED	RH063MC14R07A
VR6002	V126314BTC	VR.SEMIFIXED	RH063MC14R07A
	P.C. BOARD ASSEMBLIES		
PCB010	A3B713A01A	PCB ASS'Y	VM0044B
PCB030	A3B713A03A	PCB ASS'Y	VE0558B
PCB040	A3B713A04A	PCB ASS'Y	VE0564B
PCB070	A3B713A07APO	PCB ASS'Y	TM0266D-PO
PCB090	A3B713A09A	PCB ASS'Y	VE0565B
PCB110	A3B713A11A	PCB ASS'Y	TC0163C
PCB260	A3B713A26A	PCB ASS'Y	VE0550B
PCB300	A3B713A30A	PCB ASS'Y	VV0269B
PCB330	A48603A33A	PCB ASS'Y	VE0520A
PCB350	A3B713A35A	PCB ASS'Y	VE0461E
PCB390	A3B713A39A	PCB ASS'Y	TE0740A
PCB550	A45203A550	SEE DECK REPLACEMENT PARTS LIST	
	MISCELLANEOUS		
B501	024JT03551	CORE.BEADS	FBA04HA450AB-00
B502	024JT03551	CORE.BEADS	FBA04HA450AB-00
B503	024JT03551	CORE.BEADS	FBA04HA450AB-00
B504	024JT03551	CORE.BEADS	FBA04HA450AB-00
B505	024JT03551	CORE.BEADS	FBA04HA450AB-00
B506	024JT03551	CORE.BEADS	FBA04HA450AB-00
BT001	1412004004	BATTERY,MANGAN	UM-4(GR)
BT002	1412004004	BATTERY,MANGAN	UM-4(GR)
B1001	024JT03551	CORE.BEADS	FBA04HA450AB-00
B1002	024JT03551	CORE.BEADS	FBA04HA450AB-00
CD001	068101375A	CORD.CONNECTOR	8101375A
CD003	068101375A	CORD.CONNECTOR	8101375A
CD351	068MU2009A	CORD.CONNECTOR	8MU2009A
CD352	068M12340A	CORD.CONNECTOR	8M12340A
CD401	068184002A	CORD.CONNECTOR	8184002A
⚠ CD501	120T655808	CORD.AC	120T655808
CD801	127C200011	BRAIDED WIRE	SH-1919
CD802	068128037A	CORD.CONNECTOR	8128037A
CD803	06CK14294A	CORD.CONNECTOR	C-14294A

REF.NO.	PART NO.	DESCRIPTION	
	MISCELLANEOUS (CONT.)		
CF001	116F30H4Z1	FILTER.EMI	LTSTF223ZB
CP351	069X520019	CONNECTOR PCB SIDE	B2P-VH
CP401	069W340018	CONNECTOR PCB SIDE	TS-80P-04-V1
CP501	0694430100	CORD.UX CONNECTOR	2-173270-3
CP502	069W420029	CONNECTOR PCB SIDE	TV-50P-02-A1
CP801	069W330018	CONNECTOR PCB SIDE	TS-80P-03-V1
CP802	0694280129	CONNECTOR PCB SIDE	173981-8
CP803	069W14T299	CONNECTOR PCB SIDE	TID-X04P-Z1
CP806	069W010020	CONNECTOR PCB SIDE	005P-1100
CD2002	068126080B	CORD.EIS CONNECTOR	8126080B
CD2004	122L0H4801	CORD.JUMPER	2L0H4801
CD2501	06C725066A	CORD.EIS CONNECTOR	C725066A
CD2502	06C724044A	CORD.EIS CONNECTOR	C724044A
CD2503	122Z033603	CORD.JUMPER	2Z033603
CD2504	06C701387A	CORD.CONNECTOR	C701387A
CD2505	06C701387A	CORD.CONNECTOR	C701387A
CD4102	06C727075A	CORD.EIS CONNECTOR	C727075A
CD4501	122U060802	CORD.JUMPER	2U060802
CD4502	068118083B	CORD.EIS CONNECTOR	8118083B
CD8001	06C726079A	CORD.EIS CONNECTOR	C726079A
CD8002	068126087A	CORD.EIS CONNECTOR	8126087A
CD8003	06812C056A	CORD.EIS CONNECTOR	812C056A
CD8008	06C723030A	CORD.EIS CONNECTOR	C723030A
CF6001	1027238R91	FILTER.SAW	F-1044QS
CF6003	1012T5R502	FILTER.CERAMIC	SFE5.5MB-TF21
CF6004	1012T5R503	FILTER,CERAMIC TRAP	TPS5.5MB-TF21
CF6005	1012T5R505	FILTER.C.DISCRI.	CDSH5.5ME49K-TF21
CF6020	116T4TA4M1	FILTER.EMI	EK30-1103
CP2001	069H220329	CONNECTOR PCB SIDE	IL-S-2P-S2T2-EF
CP2002	067R006019	WIRE HOLDER	51048-0600
CP2003	069J790109	CONNECTOR PCB SIDE	IMSA-9603S-09C
CP2004	069J7H0109	CONNECTOR PCB SIDE	IMSA-9603S-17C
CP2501	0694250129	CONNECTOR PCB SIDE	173981-5
CP2502	0694240129	CONNECTOR PCB SIDE	173981-4
CP2503	067R003019	WIRE HOLDER	51048-0300
CP4001	069Q160179	CONNECTOR PCB SIDE	CPB1806-0101
CP4002	069J160260	CONNECTOR PCB SIDE	60358-06Z002-T
CP4003	069J160260	CONNECTOR PCB SIDE	60358-06Z002-T
CP4004	069Q160179	CONNECTOR PCB SIDE	CPB1806-0101
CP4102	0694270139	CONNECTOR PCB SIDE	173979-7
CP4103	067R007019	WIRE HOLDER	51048-0700
CP4501	067R006019	WIRE HOLDER	51048-0600
CP4502	067R006019	WIRE HOLDER	51048-0600
CP5001	069H250329	CONNECTOR PCB SIDE	IL-S-5P-S2T2-EF
CP501A	0694430010	CORD.UX CONNECTOR	2-173268-3
CP6001	069J1D0260	CONNECTOR PCB SIDE	60358-13Z002-T
CP7505	067R003019	WIRE HOLDER	51048-0300
CP8002	0694260139	CONNECTOR PCB SIDE	173979-6
CP8010	0694260129	CONNECTOR PCB SIDE	173981-6
CP8011	0694230129	CONNECTOR PCB SIDE	173981-3
CP8012	0694280129	CONNECTOR PCB SIDE	173981-8
CUS011	800WF00004	CUSHION-A	
CUS031	800WF00004	CUSHION-A	
CUS301	800WF00004	CUSHION-A	
CUS351	800WF00004	CUSHION-A	
CUS811	800WF00004	CUSHION-A	
DL601	103S0R2802	DELAY LINE	ELT-10Z263M
DL602	104Y14R43M	DELAY LINE GLASS	EFD-EN645A61N
DL4302	104124R43B	DELAY LINE GLASS	EFD-JL A53A2
⚠ F501	080PT2R502	FUSE	T 2.5A
⚠ FB401	043220035M	TRANSFORMER,FLYBACK	322035
FH501	06710T0006	HOLDER,FUSE	EYF-52BC
FH502	06710T0006	HOLDER,FUSE	EYF-52BC
⚠ ICP501	0832H1R601	MICRO FUSE	CCV 1.6A 125V
⚠ ICP503	084E002001	IC PROTECTOR	PRF-20000
⚠ ICP505	0832H1R601	MICRO FUSE	CCV 1.6A 125V
⚠ ICP506	0832H02001	MICRO FUSE	CCV 2A 125V
NR1001	11023472T1	R.NETWORK	RGLD3X472J-T21
NR1002	11023472T1	R.NETWORK	RGLD3X472J-T21
NR1003	11023223T1	R.NETWORK	RGLD3X223J-T21
OS8001	0779011004	REMOTE RECEIVER	GP1U18 1R
PF4001	114JL50602	FILTER.LOW PASS	4JL506 02
PF5001	0326230036	COIL.TRAP	262300 3
⚠ RY501	0560Q20112	RELAY	OST-S- 112DM
SP351	070W143006	SPEAKER	P-40S
TH501	D8R0F140M0	DEGAUSS ELE. PTH451	C262B F140M270
TM101	076G020170	TRANSMITTER	EUR-33 1412
TC1001	0100614T08	C.CERAMIC TRIMMER	VCT5F 522A
⚠ TU6001	0145V01020	TUNER VHF-UHF	TERE- ON1A
⚠ V801	098V200460	COLOR PICTURE TUBE	A51-45 7X
X101	1002T4R102	CERAMIC OSCILLATOR	CST4.1 9MGW-TFO1
X401	1002R01502	CERAMIC OSCILLATOR	CSB503 F30
X602	100W4R43B2	CRYSTAL HC49U	4.4336 19MHZ
X1001	100C8R3902	CRYSTAL HC-49/U	8.3886 08MHZ

ELECTRICAL REPLACEMENT PARTS LIST

REF.NO.	PART NO.	DESCRIPTION
		MISCELLANEOUS (CONT.)
X1002	100D32R801	CRYSTAL DT-26S 32.768KHZ
X4301	100WA4R303	CRYSTAL HC-49/U 4.433619MHZ
X6501	1003R50001	CERAMIC OSCILLATOR KBR-500AH2

RESISTOR
RC.....CARBON RESISTOR

CAPACITORS
CC.....CERAMIC CAPACITOR
CE.....ALUMI ELECTROLYTIC CAPACITOR
CP.....POLYESTER CAPACITOR
CPP.....POLYPROPYLENE CAPACITOR
CPL.....PLASTIC CAPACITOR
CMP.....METAL POLYESTER CAPACITOR
CMPL.....METAL PLASTIC CAPACITOR
CMPP.....METAL POLYPROPYLENE CAPACITOR
CST.....STYROL CAPACITOR

INTERCHANGEABLE PARTS LIST

NOTE: THE FOLLOWING PART(S) MAY BE SUBSTITUTED FOR PARTS INDICATED IN THE ELECTRICAL REPLACEMENT PARTS LIST (WITH THE SAME REF.NO.). THESE PARTS SHARE THE SAME ELECTRICAL CHARACTERISTICS AND OTHER ELEMENTS FOR COMMON USAGE. EITHER PART NUMBER MAY BE USED IN THIS UNIT.

	BASE		REPLACEMENT	
REF.NO.	PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
C4102	E024T247OM	47 UF 16V	E01PT247OM	47 UF 16V
			E51HT247OM	47 UF 16V
			E52HT247OM	47 UF 16V
C507	E52C0H101M	100 UF 400V	E0150H101M	100 UF 400V
			E53C0H101M	100 UF 400V
C630	P6M300684J	0.68 UF 50V	P6M3F0684J	0.68 UF 50V
DL602	104Y14R43M	EFD-EN645A61N	104W14R43F	ADL-CP145R
IC2002	107D003240	BA10324	103D063240	LA6324
L1001	02A6B9A970	HF70T29*7.5*19	02A1281871	KR06TT281807
⚠R458	R635811R2J	1.2 OHM 1W	R614811R2J	1.2 OHM 1W
VR170	V1263E5BTC	RH063MCE5R07A	V1263E5BT7	RH0683CE5R04A
VR4001	V126314BTC	RH063MC14R07A	V126314BTA	RH063EC14R07A
VR4003	V1263H4BTC	RH063MCJ4R07A	V1263H4BT7	RH0683CJ4R04A
			V1263H4BTA	RH063ECJ4R07A
VR4004	V1263H4BTC	RH063MCJ4R07A	V1263H4BT7	RH0683CJ4R04A
			V1263H4BTA	RH063ECJ4R07A
VR4005	V126314BTC	RH063MC14R07A	V126314BTA	RH063EC14R07A
VR403	V126314BTC	RH063MC14R07A	V126314BT7	RH0683C14R04A
			V126314BTA	RH063EC14R07A
VR5001	V126314BTC	RH063MC14R07A	V126314BTA	RH063EC14R07A
VR501	V1263L5BTC	RH063MCN5R07A	V1263L5BT7	RH0683CN5R04A
VR6001	V126314BTC	RH063MC14R07A	V126314BTA	RH063EC14R07A
VR6002	V126314BTC	RH063MC14R07A	V126314BTA	RH063EC14R07A

MECHANICAL REPLACEMENT PARTS LIST

REF.NO.	PART NO.	DESCRIPTION
101	A3B713A720	CABINET.FRONT ASS'Y
102	701UPB0044	CABINET.FRONT
103	7230004690	FLAP
104	743WKA0005	SPRING.FLAP
105	756WPA0006	HOLDER.FLAP
106	735WPA0132	BUTTON.REC
107	735WPD0098	BUTTON.DECK
108	712MPA0009	DOOR
109	711WPD0045	PANEL.DECK
110	762TSA0037	ANGLE.CRT
111	741WUA0001	SPRING.EARTH
112	761WPA0014	HOLDER.PCB(R)
113	761WPA0011	HOLDER.PCB(L)
114	800JR00054	SHEET.CRT SUPPORT(A)
115	7230004693	SHEET.LED
116	899PEC0340	CORD CLAMP NO.PEC-034-0
117	761WPA0012	HOLDER.SPEAKER
118	A3B713A740	CABINET.BACK ASS'Y
119	702UPA0083	CABINET.BACK
120	713WPA0025	GLASS.LED
121	7232020319	BADGE.BRAND
122	7230004524	PLATE.OPERATION
123	752JGA0011	PLATE.SHIELD AUDIO
124	709WPA0009	HOLDER.CABI SEIZE
125	----	CABINET.HOLDER
126	----	FIBER.WASHER 3.2*8
127	735TSA0002	PLATE.EARTH(F)
128	----	HEAT SINK
129	899SF111V0	WIRE.CLAMP
130	752SSA0009	SHIELD.IC
131	702WPA0141	CABINET.INSIDE
132	----	METAL SPACER
133	761WSA0015	ANGLE.FBT
134	----	HEAT SINK
135	----	HEAT SINK
136	----	HEAT SINK
137	----	HEAT SINK.POWER IC
138	----	HEAT SINK
139	----	HEAT SINK
140	----	HEAT SINK
141	----	HEAT SINK
142	----	FRAME.PCB
143	----	COATING CLIP CP-1S
144	7222021771	SHEET.RATING
145	753WUA0001	SPRING.EARTH M-PCB
146	752WSA0042	PLATE.FBT SHIELD
147	8900P3035W	NYLON RIVETS
148	702WSA0008	CABINET.TOP
149	771WPA0112	PLATE.JACK

REF.NO.	PART NO.	DESCRIPTION
150	890UAMS070	MINI CLAMP
151	850P800157	SPRING.FLAP FRONT LOADING
152	850P600438	BELT.FRONT LOADING 2
153	A48901A650	FRONT LOADING UNIT(FL-6B)
154	735MPA0014	BUTTON.POWER
155	753WUA0008	SPRING.EARTH P-TOP
156	702WSA0003	CABINET.BOTTOM
157	752WSA0046	PLATE.SHIELD
158	752WSA0032	IF SHIELD CASE
159	752WSA0033	IF SHIELD BOTTOM
160	753WSA0008	PLATE.EARTH
161	800JF00166	CUSHION-A
162	899P450000	CORD CLAMP NO.P-45
163	7220001018	SHEET.PTB
201	8117540804	SCREW.TAPPING(BO) TRUSS 4*20
202	8117540A64	SCREW.TAPPING(BO) TRUSS 4*16
203	8117540A24	SCREW.TAPPING(BO) TRUSS 4*12
204	8117540A04	SCREW.TAPPING(BO) TRUSS 4*10
205	8117330A04	SCREW.TAPPING(BO) FLAT 3*10
206	8117D30A04	SCREW.TAPPING(BO) WH8 BRAZIER 3*10
207	8117430A02	SCREW.TAPPING(BO) OVAL 3*10
208	8117140A24	SCREW.TAPPING(BO) PAN 4*12
209	8110630A44	SCREW.TAP TITE(P) BRAZIER 3*14
210	8110630A24	SCREW.TAP TITE(P) BRAZIER 3*12
211	8110630804	SCREW.TAP TITE(P) BRAZIER 3*8
212	8110630604	SCREW.TAP TITE(P) BRAZIER 3*6
213	8107630604	SCREW.TAP TITE(S) BRAZIER 3*6
214	8107230804	SCREW.TAP TITE(S) BIND 3*8
215	8107230604	SCREW.TAP TITE(S) BIND 3*6
216	8107230404	SCREW.TAP TITE(S) BIND 3*4
217	810A130804	SCREW/WASHER(A) M3*8
218	83SPN24000	PUSH NUT 2.4
219	8300560004	SL NUT M6
---	JB5X0500	POLYBAG + ACCEMBLY CHARGE
---	J3A20702	GUARANTEE CARD
---	J3B71301	INSTRUCTION BOOK
---	J3B71307	QUICK SET-UP SHEET
---	J4374228Z	WARNING SHEET
---	J4802020	DEW CAUTION SHEET
---	791MHA0004	LAMIFILM BAG
---	792UHA0067	PACKAGE TOP
---	792UHA0068	PACKAGE BOTTOM
---	793UCD0612	GIFT.BOX

CHASSIS/FRONT LOADING REPLACEMENT PARTS LIST

REF.NO.	PART NO.	DESCRIPTION
301	850P500023	SPRING,TR.
302	850A600139	TENSION,BAND ASS'Y
303	850A400077	TENSION,ARM ASS'Y
304	850P800141	SPRING,TENSION ARM
305	850A200036	S REEL ASS'Y
306	850A600136	MAIN BRAKE S ASS'Y
307	850P800187	SPRING,MAIN BRAKE
308	850P600446	ARM,S-S BRAKE 1
309	850P800164	SPRING,SS BRAKE
310	850A400108	BASE,S INCLINED ASS'Y
311	850P800190	SPRING,M-B 3
312	850A200035	T REEL ASS'Y
313	850A600135	MAIN BRAKE T ASS'Y
314	850A400109	BASE,T INCLINED ASS'Y
315	850P600445	LEVER MAIN BRAKE 1
316	850P000285	CS-RING 2.6*5.4*T0.1
317	868501H804	SCREW,TAP TITE(S) PAN W6 3*8
318	850P600306	LEVER,REC.SW
319	850P500042	BASE,AC HEAD 2
320	850P800233	SPRING,AC HEAD BASE 2
321	850A600148	LOADING MOTOR BOX A ASS'Y
322	850P600317	BELT,LOADING MOTOR
323	850A500008	P-R,LEVER ASS'Y
324	850P600381	SLIDE MAIN BRAKE
325	850A000090	MAIN CHASSIS ASS'Y Z2
326	850A400073	PINCH ROLLER ARM ASS'Y
327	850P800149	SPRING,P-R ARM
328	850A400105	LIMITER POST ARM 2 ASS'Y
329	850P800148	SPRING,L-P ARM
330	850P600305	CAM 1
331	850A600114	WORM ASS'Y
332	850A400102	G-ROLLER ASS'Y
333	850A300031	LOADING,LEVER 2 ASS'Y
334	850P600311	LEVER,SUB BRAKE
335	850A900083	LEVER,FL ASS'Y
336	850A300052	LOADING,ARM T ASS'Y
337	850A300051	LOADING,ARM S ASS'Y
338	850A600137	T-S BRAKE 2 ASS'Y
339	850P800165	SPRING,TS BRAKE
340	850A200043	CLUTCH ASS'Y
341	850A200038	IDLER JS ASS'Y
342	850P600459	NUT,ADJUST X2
343	850P600310	ACTUATOR,SUB BRAKE
344	850A600129	CLUTCH ACTUATOR JS ASS'Y
345	850P600303	LEVER,TENSION
346	850P400326	O-RING
347	850P600409	LEVER,CLUTCH ACTUATOR
348	850P800188	SPRING,M-B SLIDE
349	850A600109	M-B 2 LEVER ASS'Y
350	850A600108	T-A SLIDE ASS'Y
351	850P600432	ROLLER IMPEDANCE
352	850P600416	LEVER,LIMITER POST
353	850P300112	SLIDE,LOADING 2
354	850P600304	CAM 2
355	850A600099	M-B 3 LEVER ASS'Y
356	850A300049	GEAR LOADING S ASS'Y
357	850A300050	GEAR LOADING T ASS'Y
358	850P800191	SPRING,LOADING GEAR
359	850P800245	SPRING,AZIMUTH 2
360	8144J30604	CPNEHEAD SCREW M3*6
361	8146130A31	JOINT SCREW PAN M3*13
362	850P500010	ADJUST NUT
363	850P800189	SPRING,FRONT LOADING LEVER
364	850P600319	PULLEY,LOADING MOTOR
365	850P600316	BELT,REEL
366	850A400088	G-ROLLER ASS'Y
367	850PAA0199	LID,AMP SHIELD
368	850PAA0198	CASE,AMP SHIELD
369	850P000262	BRACKET,WORM 3
370	850P600315	BELT,FRONT LOADING
371	850A600140	CAPSTAN BRAKE ASS'Y
372	850P800145	SPRING,CAPSTAN BRAKE
401	850P900430	GEAR,LINK L
402	850P800175	SPRING,LINK GEAR L
403	850P900525	GEAR,SYNCHRO
404	850P900451	LEVER,FLAP 2
405	850P000537	COVER,SENSOR 2
406	850A900128	TOP BRACKET ASS'Y
407	850P900458	LOCKER
408	850P800154	SPRING,LOCKER
409	850A900138	CASS,SIDE L ASS'Y
410	850P900354	SPRING,PACK
411	850P900536	CASS,SIDE RA
412	850P900474	REMOVING 2
413	850P800198	SPRING,REMOVING 2
414	850A900122	CASS,HOLDER SUB ASS'Y
415	850P900267	SHAFT,SYNCHRO
416	850P900529	TAPE GUIDE PIECE
417	850P900532	BRACKET,SIDE RIA
418	850P900416	LEVER,FRONT LOADING SW.
419	850P800158	SPRING,FRONT LOADING SW.LEVER
420	850A900129	SIDE BRACKET R2 ASS'Y
421	850P900431	GEAR,LINK R
422	850P800153	SPRING,CLUTCH GEAR
423	850P800181	SPRING,LINK GEAR R2
424	850P900432	GEAR,CLUTCH
425	850P900417	LEVER,LOCK
426	850P800159	SPRING,LOCK LEVER
427	850P900438	WHEEL
428	850P900435	LEVER,CLUTCH
429	850P900434	LEVER,SLIDE
430	850P800180	SPRING,SLIDE LEVER 2
431	850P900531	JOINT,PULLEY 2
432	850A900089	WORM ASS'Y
433	850P900450	OPENER A
434	850P800172	SPRING,OPENER A
435	A45101A690	CASSETTE HOLDER ASS'Y
436	A44802A640	SIDE BRACKET R ASS'Y
437	850P900523	SPRING,FRONT LOADING EARTH
438	850P800230	SPRING,LOCKER R
439	850P800243	SPRING,EARTH
501	8107126604	SCREW,TAP TITE(S) PAN 2.6*6
502	8102130404	SCREW,PAN M3*4
503	8107226804	SCREW,TAP TITE(S) BIND 2.6*8
504	8107230A44	SCREW,TAP TITE(S) BIND 3*14
505	8107230A64	SCREW,TAP TITE(S) BIND 3*16
506	8107230604	SCREW,TAP TITE(S) BIND 3*6
507	8107230804	SCREW,TAP TITE(S) BIND 3*8
508	8110230804	SCREW,TAP TITE(P) BIND 3*8
509	83ETW25000	E-RING 2.5
510	82Q3154B3N	POLYSLIDER WASHER 3.1*5.4*T0.13
	82Q315403N	POLYSLIDER WASHER 3.1*5.4*T0.3
511	82P255504N	POLYSLIDER WASHER(CUT) 2.5*5.5*T0.4
512	82P306005N	POLYSLIDER WASHER(CUT) 3.1*6.0*T0.5
513	82A3270054	WASHER 3.1*7.0*T0.5
514	82A4080054	WASHER 4.3*8.0*T0.5
515	8107230404	SCREW,TAP TITE(S) BIND 3*4
516	815DJ20302	SET SCREW 6 CUP POINT M2*3
517	8145J30601	SCREW,+UPSET M3*6
518	83CST35050	CS-RING 3.5
519	83ETW30060	E-RING 3.0
520	8117B26804	SCREW,TAPPING(B0) WH6 2.6*8
521	82P2660C5N	POLYSLIDER WASHER(CUT) 2.6*6.0*T0.25
550	82Q315405N	POLYSLIDER WASHER 3.1*5.4*T0.5
551	86817CGA04	TAPPING(B0) BIND WH6.5 2.6*10
552	8107220504	SCREW,TAP TITE(S) BIND 2*5
CD2003	122L093601	CORD JUMPER 2L093601
CD5001	068126055A	CORD EIS CONNECTOR 8126055A
CD5003	06C723027A	CORD EIS CONNECTOR C723027A
CP1103	069R7H0069	CONNECTOR PCB SIDE 52044-1710
D1101	0010G00030	INFRARED LED GL451T
H5001	1523V91015	HEAD,AUDIO CONTROL HVMZA1150A
H5002	1543V02005	HEAD,FULL ERASE HVFHF0005A
⚠ L1501	02BH000005	ELECTRO MAGNET JTM1002-01-0100
⚠ M101	1596P58008	MOTOR,LOADING MXN-13FB12F
⚠ M2001	1510S98024	CAPSTAN DD UNIT F2QTB02
PCB550	A45203A550	DECK PCB ASS'Y VEO280
Q1101	0000G00040	PHOTO TRANSISTOR PT493FT
Q1102	0000G00040	PHOTO TRANSISTOR PT493FT
Q1510	0002300140	PHOTO COUPLER SPI-315-04
SW101	0500211001	PUSH SWITCH SPPB61023A
SW102	0520U44002	SWITCH,ROTARY SRZZ0B047A
SW103	0501211001	PUSH SWITCH SPPB51096A
⚠ UN4001	A46153A500	CYLINDER UNIT ASS'Y A46153A500